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RUPTURE OF THE LIVER AND ITS COMPLICATIONS, WITH THE REPORT OF A CASE*

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Rupture of the liver, either simple or complicated, is a fairly frequent injury judging from the number of articles concerning it that have been abstracted in the International Survey during the past five years. However, it has not become so frequent as to have become commonplace and the severity of the disease alone warrants our interest in its diagnosis and treatment. According to DaCosta[1] over one-half of the cases die of hemorrhage during the first twenty-four hours. Eighty per cent of the cases will die if not operated upon. The operative mortality has steadily declined since operation was first performed for this lesion about 1885. Edler[2] placed the mortality at 66 per cent in 1887, but more recent authors have estimated the mortality at 40 to 44 per cent. Opinion is unanimous that where the diagnosis is certain, an attempt should be made to save the patient by opening the abdomen and arresting the hemorrhage, and in a suspected case an exploratory operation should be performed.

The symptoms of a laceration of the liver are those of severe intra-abdominal hemorrhage accompanied by hepatic tenderness and respiratory embarrassment. Tenderness and pain may be localized to the hepatic area or not, depending upon the interval of time elapsing between the injury and the time of examination. The abdomen rapidly becomes boardlike and ultimately distended. Usually there is abdominal pain that may radiate to the back. The area of liver dullness is usually increased. Shifting dullness in the flanks aids in the diagnosis of intra-abdominal hemorrhage but does not define the location of the hemorrhage. Another diagnostic aid of similar value is aspiration of the peritoneal cavity as advocated by Charles White[3] several years ago. These tests are of untold value in differentiating between simple shock and shock due to internal hemorrhage. In cases of relatively long standing, where there may be a slight laceration of the liver with some absorption of bile by the bloodstream, Finisterer has laid stress upon bradycardia, but apart from the fact that other authors have arrived at different conclusions, the relative rarity of bradycardia is against a generalization of this diagnostic sign. The Krauss-Biedl reaction might have some value in these late cases, except the time and skill required for the test.

The treatment of rupture of the liver is immediate laparotomy and the arrest of the hemorrhage. In a diagnosed case, the site of the incision will of course depend upon the lobe of the liver involved. If it is uncertain which lobe is injured, a median incision should be made, although Steiger in 1921[4] pointed out that it is safest to incise where the patient says it hurts most. Lacerations in the superior surface can be reached by the method of Lonnelongue of resecting the eighth, ninth, tenth, and eleventh costal cartilages and drawing the ends of the ribs out. Or the coronary ligament and the right lateral ligament can be cut according to the method of Langenbuch, and the liver can thereby be delivered well out of the abdomen. The hemorrhage can be arrested by the method of Pringle, of grasping the vessels of the porta hepatis between the thumb and forefinger. This allows the assistant to remove the blood and clots from the abdomen and search can be made for the laceration in a dry field. The treatment of the laceration itself will depend upon the size of the laceration, its location in the liver, and the exposure. Small lacerations may be cauterized to arrest bleeding, but this method is unsafe for large lacerations because of the danger of secondary hemorrhage. The method of choice in treating large lacerations is the introduction of interrupted through-and-through sutures of 30-day chromic catgut. A large, round, full-curved needle without a cutting edge should be used for the introduction of these sutures. Two longitudinal reinforcing sutures should be made, using plain No. 2 catgut. Schlatter advocates the stitching of the capsule with fine silk. Where the suturing has apparently produced hemostasis, Wildegans[5] closes the abdomen without drainage and he reports a case of transverse ruptures of the liver, pancreas and stomach treated

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in this manner with healing by first intention. When the laceration is in the superior surface and there is not sufficient exposure to permit the introduction of the sutures, the wound may be packed with gauze, held against the diaphragm by other gauze packs, or by suturing the liver to the anterior abdominal wall. Chiari,[6] in 1921, in writing of lacerations of the convexity of the liver, advocated arresting hemorrhage by pressing the injured lobe against the vault of the diaphragm and suturing the lobe to the paretal peritoneum of the costal arch. He reported two cases in which this method was tried. One patient recovered. The other patient died as the result of other severe injuries, but the autopsy showed that the hemorrhage had been controlled. Chiari maintained that this method is better than packing, inasmuch as the latter always leads to long continued suppuration.

Besides the treatment of the laceration of the liver per se, in the usual case, shock must be combatted both during and following the operation. Where there has been the loss of a large amount of blood, transfusion of blood is imperative. Autotransfusion is being practised more and more and has given excellent results, although the reaction is slightly more severe than in isotransfusion. It is a relatively easy matter to collect the blood from the abdomen either by a ladle or by aspiration. Little harm is done the corpuscles by either one of these methods. The blood is mixed with the required amount of sodium citrate solution and reinjected. Generally, a second transfusion must be given, as the blood recovered from the abdomen is much less than that lost due to the clotting in the abdomen. Autotransfusion has a limited field, but when indicated is a great aid in a serious emergency. Reaction in autotransfusion is more frequent than in other methods, but it nevertheless seems to be safe. Charles White reports the use of this method in six cases without ill effects. Regarding the time that the patient should be confined to bed following suturing of the liver, Martin Roan[7] states that forty days are required, as owing to the absorption of the stitches there may be additional hemorrhage which must be taken care of by the coagulating power of the blood. The usual time for removal of packs is the ninth day, although cases have been reported where they were removed at an earlir period without harm.

Before discussing the complications of rupture of the liver, a brief review of the anatomy of the liver might be pardonable. Its close relationship to other organs should be borne in mind. Probably the most important relationship is with the diaphragm, as a very large portion of the surface of the liver is in contact with this membranous muscle. The liver may be said to be slung from the diaphragm by folds of the peritoneum constituting the coronary and right and left triangular ligaments. Of the five surfaces of the liver, four are in contact with the diaphragm. It serves as a partition between the liver and other important organs. The diaphragm separates the base, or right lateral surface, from the right pleural sac and right lung; it separates the anterior surface from the anterior thoracic wall, the superior surface from the right and left lungs and pleural sacs and from the pericardium and heart. It separates the posterior surface from the vertebral column. Other important organs that are in contact with the liver are the stomach, the right kidney and right suprarenal gland, the duodenum, the gall bladder, the esophagus, the hepatic flexure of the colon, and the inferior vena cava, not to mention the hepatic artery, portal vein, and common bile duct. It will thus be seen that any blow or other violence sufficient to injure the liver, can readily injure other vital organs.

Injuries to the liver are accompanied by more numerous complications than most other traumatisms. These may include the rupture of other abdominal viscera. Not infrequently, the symptoms of the secondary injury are so prominent that they mask even the rupture of the liver. Laceration of the liver may divide bile-ducts and allow bile to escape into the peritoneal cavity and, perhaps, externally. Bile, if sterile, will do little harm to the peritoneum, but if it contains bacteria it will produce diffuse peritonitis. Even sterile bile is corrosive and may cause fibroplastic peritonitis. In a few cases after several days, jaundice and skin itching have been noted. Sugar may appear in the urine. Liver abscesses and subphrenic abscesses may develop from portal stream infection of subcapsular and subphrenic hematomata. The common complications of a severely ruptured liver are fractured ribs, lacerated lung, ruptured spleen, ruptured kidney, and ruptured diaphragm. Doughty[8] reported a case in 1923 in which post-mortem examination revealed a linear tear of the right side of the pericardium through which the heart protruded into the right pleural cavity. A fibrinous exudate was present between the visceral pericardium and

the pleura. In the left side of the diaphragm there was a tear easily admitting the hand. In this opening were the stomach and some of the small intestines, extending up to the pleural cavity. There was a small laceration of the diaphragmatic surface of the liver and some bloody fluid in the peritoneal cavity. These severe cases are not the ones that give trouble from a diagnostic or therapeutic standpoint, because they are rare and there is only one outcome. The cases that first escape attention are often the most difficult to treat and may terminate fatally. An illustration of this type case is that reported by Shingleton Smith[9] some years ago. A woman, aged fifty, had been in good health for the past fifteen years, until ten days before, when she was seized with vomiting and shivering fits. Six months previous to this she had been struck across the right lower ribs by a broom handle, wielded by her husband. When brought to the hospital she had a temperature of 102 degrees. There was severe pain in the right side over the lower ribs, fulness at that area with obliteration of the interspaces, diminished vocal vibration, marked dullness on percussion. Exploration with the needle produced no fluid. A few days later, a trocar inserted into the ninth interspace produced thick chocolate fluid. A rib resection was then performed. Several weeks later a large swelling appeared in the groin. The patient died about one month after admission to the hospital. Autopsy showed the lungs to be normal. There was a large abscess in the liver. Also a psoas abscess. The sinus from the pleural sac extended down to the liver but apparently did not communicate with the liver abscess. There was no connection between the liver and psoas abscesses. Burton Lee[10] reported a case in 1910 of a boy aged thirteen, who was struck by a baseball bat over the right side, low down. There was severe and sudden pain in the region named and the patient was almost breathless for a moment. The patient was weak and thirsty but was able to walk three blocks. When seen at the hospital one and one-half hours later, there was slight rigidity of the abdomen and some tenderness in the upper right quadrant. There was no dullness in either flank. Dullness appeared two hours later. Hemoglobin was 100 per cent, R. B. C. 4,896,000, W. B. C. 30,000. Laparotomy was done and a Y-shaped rupture of the superior surface was found, about three inches long. The hemorrhage was arrested by gauze packing, and the liver was held up by gauze packs and adhesive straps. Two days later, the hemoglobin was 75 per cent, R. B. C. 3,432,000. On the tenth day the hemoglobin and red count were the same. The W. B. C. were 16,000. Transfusion two days after operation was unsuccessful. Nine days after operation the drains were completely removed. Two weeks after operation, on account of tenderness and fever, an exploratory was performed by Dr. John Erdmann. Nothing could be found in the upper abdomen. One week later there appeared dullness over the right chest posteriorly, low down. Three explorations with the needle were negative. Six weeks after the original operation the right chest was opened by Dr. Lee, with negative results. Two days later Dr. J. A. Hartwell explored with the needle and found pus below the diaphragm, on the left side. The cavity was opened and drained. The cavity did not communicate with the right side. The boy then began to improve. Five weeks after the original operation the hemoglobin was 20 per cent. The interesting features of this case were: 1, the site of rupture, making use of suture or cautery impossible; 2, efficiency of packing for controlling hemorrhage from the liver; 3, long and complicated course of case with final disclosure of left-sided subphrenic abscess.

A case of rupture of the liver presenting many complications came under my care in 1924. The patient, T. V., aged nineteen, a Cuban boy, was admitted to the Gordon Keller Hospital at 8 p.m., January 25, 1924, with the history of having been jammed into a post by his Ford truck about an hour before admission. The patient said he had pain in the abdomen immediately after the accident, but was able to walk to a doctor's office about a block away. He was sent to the hospital on my service. When seen on admission, the boy did not look very sick but complained of pain in the abdomen, not localized to any one spot. The temperature was 99.4, pulse 120 and weak, respirations 24, blood pressure 90/60. The entire abdomen was rigid and the tenderness was general. The patient complained of being very thirsty. There was some dullness in the flanks. A catheter was inserted into the bladder and a small amount of clear urine was obtained. The patient had a severe coryza and laryngitis, but no rales could be heard throughout the chest. The heart sounds were clear. The tentative diagnosis was intra-abdominal hemorrhage from a ruptured viscus. Laparotomy was performed as

soon as the operating-room could be prepared. A high right rectus incision was made. The abdominal cavity was full of free blood and large blood clots. One of these was about the size of a normal liver. The blood and clots were removed from the abdomen and the abdomen was thoroughly explored for the bleeding point. There was some ecchymosis in the transverse mesocolon, but not enough to account for the blood in the abdominal cavity. The inferior margin and anterior surface of the liver were intact, but on inserting the hand over the superior surface of the liver, a large tear about 6 cm. in length was found at the tip of the right triangular ligament and probably extending into the ligament. No tear was felt in the diaphragm. Because of the situation of the laceration and the poor condition of the patient not allowing for further exposure of the liver, no attempt was made to insert sutures, but two large gauze packs were inserted into the tear and the liver held up by two more packs, and the wound was closed. Closure was made with continuous No. 2 plain catgut to the peritoneum, continuous No. 2 chromic catgut to the muscle and fascia, and continuous fine black silk to the skin. Four interrupted silkwormgut sutures were inserted through all tissues except the peritoneum. The patient was infused with normal saline while on the table and after being taken to his bed. On return to the ward from the operating-room, the patient's condition steadily grew worse and therefore he was given 250 c.c. of blood at 4 a.m. As there was no appreciable improvement following this, and he seemed to be sinking, he was given 400 c.c. at 6 a.m. His condition improved greatly following the second transfusion and remained fairly good during the remainder of that day. During the first twenty-four hours the temperature rose as high as 102.4 rectal and the pulse stayed at about 130. The respirations were between 24 and 30 and did not go above 30 at any time during his stay in the hospital. Urinalysis that first day showed a trace of albumen, no casts and many red blood cells.

At 3 a.m. on January 27, the second day, patient became very weak and pulse began to ascend. He was given 300 c.c. of blood at 6 a.m. and responded fairly well. Again that evening his condition became grave and he was given 400 c.c. of blood at 9 p.m. Patient had a severe chill at 10 p.m. and followed by a profuse sweat, and from that time his condition improved greatly. A blood count made that day showed the red count to be 3,300,000, leucocytes 9800 and hemoglobin 47 per cent. The rectal temperature in the evening rose to 103.6 and the pulse to 140. The condition on the next day remained about the same. On the fourth day the two superficial drains were removed. That day the patient developed a cough and complained of pain at the right base. Examination of the chest by Dr. Grantham revealed dullness on percussion at both bases. Dr. Grantham advised the administration of tincture of digitalis 5i every 4 hours for 6 doses. On this date icterus of the skin and scleræ was first noticed. This increased during the next four days and was most marked on the fifth day after the accident.

On the fifth day the remaining two drains were removed and the condition of the wound was satisfactory. The general condition was good except for the signs in the chest, which remained the same. The following day the left chest seemed to have cleared up, but there was dullness at the right base.

On the seventh day it was noticed that the silkwormgut sutures were pulling out and the upper end of the incision was ragged. The drainage was moderate in amount and consisted of bile-stained serum. The icterus of the skin and scleræ had decreased. The right chest was explored with needle and about 500 c.c. of serum removed. Tapping was resorted to on the next two days and about the same quantity of serum was obtained each time.

On the tenth day the wound had its daily dressing, and since the silkwormgut sutures had almost cut their way through the skin, they were removed, and a tight adhesive dressing was applied to the abdomen. Meanwhile, the patient's cough persisted, although the temperature was gradually descending. On the eleventh day, about 4 a.m., the patient had a severe attack of coughing and soon afterward complained of pain in the incision, but the nurse did not think it necessary to call a physician, as the patient complained frequently anyway. When the wound was dressed at 8 a.m., a loop of bowel was found projecting through the lower end of the incision, where it had become adherent to the gauze dressings. The patient was taken immediately to the operating-room and under nitrous-oxide anesthesia, the bowel was cleansed with ether and replaced in the abdomen. During the first three days after this closure the patient remained in

fairly good condition, but became toxic on the fourth day and vomited occasionally. On the fifth day, February 10th, he was much weaker and vomited large amounts of undigested food. An enterostomy was performed under 1 per cent novocaine and through a left rectus incision. The bowel was opened seven hours after it was brought to the surface, and on opening the bowl fluid shot up in the air about three feet. The patient had instant relief and his condition improved greatly during the next few days. On February 18th fluid again accumulated in the right pleural cavity and thoracentesis recovered 450 c.c. of thin reddish liquid that had a specific gravity of 1020 and showed 150 erythrocytes and 2000 leucocytes per cubic millimeter. Urinalysis at that time showed a 2 plus albumen, a few epithelial and pus cells. The chest was examined by Dr. Blake on February 20th. Dr. Blake thought the pleural effusion was probably due to tuberculosis. Aspiration on the 21st produced 410 c.c. of serum. Aspiration was repeated on the 26th and a large amount of serum was withdrawn. Following the enterostomy the patient began to lose weight rapidly. An attempt was made to give him nourishment by prepared predigested food, administered orally and rectally. On March 1st, the thirty-sixth day after the accident, the hemoglobin was 62 per cent, R. B. C. 3,300,000 and the W. B. C. 16,800. The patient was sent home in an ambulance on March 9th. At that time the right rectus incision was about healed. There had been considerable separation of the skin edges and the scar was wide.

During his stay at home he was under the care of his family physician and every means was taken to build up his strength, but to almost no avail. Nothing could be done in that line until the enterostomy was closed, as this was in the jejunus, judging from the nature and consistency of the discharge. It was decided to attempt this closure in two stages; first a release of the adhesions about the right rectus incision under local anesthesia and as soon afterward as possible the closure of the enterostomy by a lateral anastomosis. Accordingly the patient was returned to the hospital on March 27th. Blood count that day showed the hemoglobin to be 54 per cent, R. B. C. 3,615,000, W. B. C. 9,000. The next day a blood transfusion was commenced, but after inserting 150 c.c., the condition of the patient demanded discontinuance of the treatment. On March 29th the abdomen was opened, under local anasthesia, through the right rectus scar and the adhesions producing the obstruction were released. These were filmy in nature. Catheters were inserted through the enterostomy to determine the direction and patency of the bowel. During this stay in the hospital several attempts were made to promote closure of the enterostomy by freshening the wound. On April 22nd the patient was brought to the hospital for the third time, and under a short general anasthetic, the enterostomy was closed and a lateral anastomosis was performed. The following afternoon the patient began to complain of pain in the abdomen and the rumblings of the intestines could be heard by anyone in the room. The pulse became weak and rapid toward midnight and the pain increased. At 4 a.m. the next morning the bowels suddenly moved, the patient had instant relief from pain, the pulse dropped from 160 to 120 in five minutes and from that time on patient made uneventful recovery and was sent home on May 1st.

In conclusion we wish to stress the importance of, first, the necessity for early operation in every suspected case; second, the value of autotransfusion; third, the probability of numerous serious complications.

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DISCUSSION

Dr. J. W. Alsobrook, Plant City:

Dr. Hardy has read us a very valuable paper on the diagnosis and symptomatology of rupture of the liver, but I must say that he had the most grief in the cases that he reported of any man I have ever heard.

It has been my experience—and I think we should speak from experience on rupture of the liver,—and the only experience I have had has been in gunshot wounds. Many of these cases died very quickly and some of them recovered without operation; and some of them recovered with operation, and some died with operation.

I remember a case of a very robust negro man, about twelve years ago, who was shot by his wife with a 38-calibre revolver while he was lying in bed. The bullet entered going through both lobes of the liver. He was brought to my office within thirty minutes and operated within forty to forty-five minutes from the time he was shot. His abdomen being of the very marked muscular type, did not distend but was entirely filled with blood, and there were two bullet holes through the liver, one through the left and one through the right lobe.

I want to digress right here to say that Dr. Hardy recommended the use of a large round needle and No. 2, 25 day chromic suture. I would recommend the use of a small round needle with a plain, soft catgut suture, and you have to have the best, preferably the type known as "unboilable" suture, which is very much softer, is not so stiff, etc. I use a small round needle of good length and large suture, because of the fact that even with a suture that fills the puncture in the liver you may have a hemorrhage around your suture. If you use a long curved needle and a very large soft catgut suture, it will last quite long enough for healing to take place, according to my experience. In this case I used a No. 4 plain catgut suture with a long curved intestinal needle,—which is a very small needle, requiring a carrier for the suture, as you could not thread the needle. I closed both punctures with No. 4 plain catgut and the hemorrhage was completely controlled. Also, you cannot put very much tension on your suture. As the hemorrhage ceases you want to go very lightly on tying your sutures.

This man was carried back home, and on the tenth day he walked one mile to town. Therefore, it must not require quite forty days for a liver to heal. He got out of bed and walked one mile to town and back. In three weeks he was back at work. That was a gunshot injury and bound to have some devitalization of tissue, and yet that negro's liver healed in the short period of ten days to two weeks. At the end of three weeks he went to work.

I recall another case of gunshot of liver. The diagnosis was made by finding liver tissues inside of the negro's shirt. He was shot in the back, and he got well without any attention.

I had another case of gunshot wound of liver which died within five minutes time. So you can readily realize that a gunshot wound of the liver which strikes one of the larger vessels, will be just as fatal and just as quickly fatal as a gunshot wound of the heart, or that is my experience with rupture of the liver.

Before closing I would like to stress one point —that of using a long, curved, small, round needle with the largest, softest catgut suture possible.

Dr. Waas, Jacksonville:

There are two points in Dr. Hardy's paper that I want to emphasize.

First, Autotransfusion: I recall quite recently a case of automobile injury with rupture of the right lobe of the liver. Operated immediately and gave, I think, either four or five hundred c.c. of the patient's own blood that I removed from the peritoneal cavity. The most marvelous thing about it was the rapidity with which the blood coagulated. You could see it coagulate on the edge of the liver within five minutes following the transfusion.

The second point is the rigidity that comes on and the rapidity with which this rigidity comes on, which rigidity is quite as severe as in the case of perforated duodenal ulcer. I feel that when you have this rigidity you should operate immediately. The idea is to get these cases early. There is no use to wait, for the longer you wait the more hemorrhage and shock you will have.

Dr. Jos. Halton, Sarasota:

My experience with rupture of the liver is confined to only one case. This was the case of a man who was in a railroad accident, being crushed between a box car and a hand car, fracturing the right rib with perforation of the liver. This man walked for six blocks, refused help, said that he felt perfectly normal, and suddenly collapsed. He was brought to the hospital where X-ray showed a fracture of the rib. An immediate laparotomy was performed showing perforation of the liver. He died on the operating table. That has been the only experience that I have had with rupture of the liver.

I am going to differ with Dr. Alsobrook about the needle. At Johns Hopkins a number of years ago, they invented a sort of blunt pointed and wide needle, and suturing of the liver can be accomplished with that needle a great deal better than with a small pointed needle. It seems to push away the blood vessels and you do not get so much hemorrhage.

I wish to congratulate Dr. Hardy very much on his paper.

CONCLUSION

Dr. George E. W. Hardy, Tampa:

I want to first thank you all for listening so attentively to the paper, and for the discussions.

Regarding the needles: During my experience I have always used the large needle that Dr. Halton described. All other ruptures or lacerations of the liver, than the one mentioned, which I have seen, were gunshot wounds. I think that is certainly a good point that Dr. Alsobrook brought out about the small needle with gut much larger than the needle, so that you fill up the line of suture afterward perfectly checking the bleeding by the swelling of the catgut.

Regarding the length of time: As you noticed in the paper, a forty-day interval was the quantitative length of time. Of course, in this case we kept the patient in bed forty days, but not from choice.

REPORT OF A CASE OF IMPERFORATE HYMAN IN A FEMALE RESULTING IN RETENTION OF MENSTRUAL FLUID AND URINE*

H. E. PALMER, M.D.,
Tallahassee.

I desire to report a rather unique case that came under my observation several months ago.

Carrie W., colored female, age fifteen, school girl, came to my office for relief for retention of urine. Her mother said "She hadn't made water since befo day," It was then 3 p.m.

She was well developed, and in good physical condition. Complained of more discomfort than pain, in lower abdomen.

While lying on table with abdomen exposed, the abdomen presented the contour and size of a woman in her fifth or sixth month of pregnancy. Palpation revealed fluid. Examination of the vulva revealed an imperforate hymen. Pressure about the perinæum and fouchette gave the sense of resiliency that you get when pressing on a rubber pad.

I catheterized her and drew off about a quart of urine. The resiliant feeling about her lower genatalia persisted. I then made a slit in the hymen, and about a pint of menstrual fluid escaped.

This girl evidently had been menstruating for several months or long enough for the vaginal space to become filled sufficiently to make pressure on her urethra, thereby causing retention of urine.

In connection with this case I recall a statement of Prof. W. T. Howard, Gynæcologist, and Pediatrician of the University of Maryland. He was examining a colored female, age sixteen, and found an unruptured hymen. He stated that in a practice of nearly fifty years this was the fifth case he had found in the colored race. My case above is the fourth that I've seen in an experience of thirty-two years. I give this fact for its historical medical interest.

DISCUSSION

Dr. G. R. Holden, Jacksonville:

Cases like that which Dr. Palmer describes are very interesting, and certainly that point on retention of urine being caused by the pressure of retained menstrual fluid, is in my experience, at any rate, unique.

In this discussion I wish to report a case which came to my attention in 1909, and which is of interest in relation to Dr. Palmer's case. This is the case of a woman who became pregnant and went into labor, the last stage of labor, with a hymen which was 99 per cent imperforate. The patient was one of Dr. J. H. Douglas's, and the history of the case is about as follows:

Dr. Douglas was called one morning to go out and attend this woman in labor. While he knew the family, he had never examined this woman and knew nothing of the case until he got there that morning. As he told me later, when she was apparently in labor, when he came to examine her he was unable to introduce his finger into the vagina. He could feel the child's head within the vaginal outlet, but, as he expressed it, there was a solid wall of tissue between his finger and the head. He did not know what to do as they were on the outskirts of the city, so he sent her to St. Luke's Hospital and I saw her there in consultation. We put the woman on the operating table, exposed the part, and as he said, there was a solid wall of tissue which shut off the vaginal orifice. Behind this was very evidently the child's head, trying its best to go through. The cervix had been fully dilated and the child's head was right in the vaginal outlet and was probably kept from being born for all of three

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hours by this wall of tissue. We examined for an opening in this imperforate hymen, and of course, there was an opening but it was exceedingly small. After incision through the hymen, the baby was born at once. On examination, we found the hymen at least one-fourth inch thick throughout, but somewhere in that wall there was a slight perforation as she had menstruated. She told us afterward that her menstruations had been dragged out and prolonged, although she had never had any pain. She married about one year before this child was born. Sexual connection, while not perfect, she did not realize that it was not all right. Apparently at the time of connection that wall was pushed upward—there was considerable elasticity to it, and therefore, this outside inverted hymen had acted as a vagina.

I have kept in touch with that woman, and she has had one or two children since then, and has never had any other abnormality. It is, however, of some interest, I think, in connection with Dr. Palmer's case.

Dr. L. S. Oppenheimer, Tampa:

I want to report two cases, neither of which, I believe, has ever been put on record.

The first one I saw in the city of Vienna, quite a number of years ago, in which a young woman was brought into the ward for delivery, who had an imperforate hymen. The explanation was, of course, that it was not imperforate or she could not have become pregnant, but it was impossible for them to find the perforation; however, she was pregnant and was delivered after incising the hymen.

The other case was that of a married woman, twenty-two years of age, some twelve years ago in Tampa. She had a vagina, if you wish to call it so, of perhaps one inch in depth. She would have menstrual symptoms every month, but there was no flow of fluid. There was no aperture that I could find anywhere in the so-called vagina until I made it with the knife. In the course of three or four years after that time, she became pregnant, but her vagina was not one inch deep and no menstrual flow had appeared there up to that date. The child is still living and the mother menstruates normally.

Dr. W. M. Rowlett, Tampa, Fla.:

This, indeed, is a very interesting paper that Dr. Palmer has given. I was very much interested in Dr. Edwards' embryology, and wish he had continued it a little further. It seems that it applies in this instance. The uterus and vagina are found by the fusion of the two mullerian ducts, fusion beginning at the lower end and going upward. Now, if there is any interference to these two canals at any point along the entire length, we have these abnormalities that Dr. Palmer spoke of, and the one I mentioned in my paper just preceding,—strictly an accident to the mullerian ducts.

We meet up with many strange conditions of the hymen in the practice of gynecology and obstetrics. Some of these hymens, you will observe, are very elastic, stretch very easily, and may permit sexual coitus without laceration. On the other hand, we might find one that is very rigid and will not permit sexual coitus unless incised. Therefore, as a medical-legal point which you might bear in mind, the finding of an entire hymen is not evidence of virginity.

A question comes to me of whether these various cases of imperforate hymen are purely hymeneal cases. I remember one instance of a patient that had just begun to menstruate and had a vaginal retention; upon close inspection we found that our atresia was due to adhesions of the labia minora instead of an imperforate hymen, and after separating these adhesions we found that there was a hymen beneath. I believe that in many of these instances, a closer observation would demonstrate the fact that many of these so-called imperforate hymens are really vaginal atresia caused from adhesions of the labia minora.

Dr. C. D. Rollins, Jacksonville:

In these cases you have retention of the menstrual secretion over a long period of time. I saw one case in a New Orleans clinic, just a couple of weeks ago, of a young girl, about sixteen years old, that had had a retention of twelve to fifteen menstrual periods. This case gave a history of perfect health,—absolutely nothing in the history to indicate any reason for absence of the menstrual flow. The patient was examined and found to have a retention of this large amount of accumulated menstrual fluid manifesting itself by a closed hymen and bulging vulva. The hymen was opened on the table and between one and two quarts of tarry, bloody fluid came from the vagina.

In contrast to this case, I want to mention a case that I had a good many years ago, of vaginal obstruction, where the menstrual flow was re-

tained until the woman was twenty-five years old. The history was one of perfect health. This was not a typical case of retention but was a case of atresia similar to the case mentioned by Dr. Rowlett. There was an obstruction of the vaginal opening one-half inch internal to vulva opening. She had never menstruated in her life and was a perfectly healthy woman.

She was married at the age of twenty-two and the case came to me on account of the sterile marriage of two or three years duration. When I examined her, the obstructed vagina was discovered and attributed to an atresia. The blocking possibly might have been due to the hymen having been pushed back by persistent copulation which had never, however, been reported as difficult. It was entirely due to the fact that she had a sterile marriage that she sought medical advice. In this case I made a crucial incision through this vaginal obstruction and she expelled just a few ounces of dark, thick, tarry menstrual fluid. She had passed over possibly one hundred and fifty menstrual periods and only had at this time just a few ounces of menstrual fluid, probably from one or two of the last periods. This seems to indicate that the vaginal mucosa had assumed the power of absorption or redistribution of this menstrual fluid.

The case of the young girl who had passed over fifteen menstrual periods and had more than a quart of retained menstrual fluid, illustrates that the vaginal mucosa had not acquired the function of reabsorption.

It may be mentioned in the case of the married woman that she became pregnant immediatly after operation, and I delivered her at term.

Dr. L. A. Peck, West Palm Beach:

This is a case that I recite to bring out the features that we might meet, and to show that we sometimes find no hymen at all. This is a very unusual case, that of a negress about nineteen years of age. She was well developed, but her facial expression showed a little bit of timidity, or rather an exaggerated feminine appearance. We were unable to manipulate the cervix, so carried her to the hospital. I had one of the surgeons to assist me, and we started in. We worked up for three and one-half inches and found no trace of a vaginal canal. There was no indication of a vaginal orifice. We then made an incision into the abdomen to verify these conditions. We found that both ovaries were good, of normal size, and that they were ovulating. The fallopian tubes were well developed, and both the round and broad ligaments were present. On hunting for the uterus we found it to be only three-fourths of an inch in length and less than one-half inch in width—all that was to be detected. We tried to bring this down and hold it until the tract to the vaginal canal was made, and did this with success. Now, both the labia majora and the labia minore were both fairly well developed, and the hair around the vulva was also normal. The mammary glands were both normal in size.

This individual was kept in the hospital for six weeks, during which time she had grown one and a half inches, and the mucous membrane had filled in. When it came my time for an annual vacation, which I spent in New Orleans, last year, I asked the interne to continue this vaginal pack. When I returned in six weeks the whole thing had pushed back, and we were never able to establish, or rather bring down, this infantile uterus. Yet, all the rest of the generative tract, including the mammary glands, were complete.

The attempted vaginal opening was a success and maintained for six weeks, but after that the upper two-thirds closed. I have not attempted to do any further reconstruction of the adhesions in the vagina.

CONCLUSION

Dr. H. E. Palmer, Tallahassee:

I really cannot account for the disappearance of the fluid in the case referred to by the gentleman who discussed my paper. As a matter of fact I cannot explain why the fluid, or rather, how it could be absorbed if it was ever there, because the vagina has no absorption powers. It must have been just a case where the woman had not begun to menstruate. We know as a matter of fact that there are perfectly normal women who do not menstruate before twenty or twenty-five years of age. I appreciate the interesting discussion that my paper called forth.

A LIMITED SURVEY OF THE THERAPEUTIC ACTION OF THE SUN*

DR. W. W. AND O. B. McKIBBEN,
Miami, Florida.

What is the action of the sun on the organism? This is one of the most interesting questions asked of modern science. In the first place, there is a double action of light on the body, its direct

*Read before the Dade County Medical Society.

and indirect action. The work of Wiesener has proven that the infra red rays and more especially those near the red are bactericidal and by means of these long wave lengths they penetrate the body tissues, coming in contact with deep-seated lesions.

We all know that the violet and ultra violet rays held at a depth of one millimeter in the skin are absorbed by the superficial sanguine surfaces formed by a network of capillaries, dilated by the sun. It is to the action of these rays that we may attribute the phenomena of erythema and pigmentation.

Pigmentation gives protection against the irritation provoked by the ultra violet rays and it also regulates the action of the thermic part of the solar system. The biological value of pigment is recognized increasingly by scientists. It is probable that pigment receives supplies and increases the activity of the elements essential to metabolism.

Bloch has demonstrated a substance very much like adrenalin; submitted to the action of an enzyme of the epidermis, it produces the formation of epidermic pigments, light strongly accentuating this formation. On the other hand these ferments of the epidermis seem to depend upon the quality of vitamine contained in the food. This has been proven recently by the experiments on rachitic and underfed children in Vienna. The action of radiation produces a very strong retention of the lime phosphate in the body, which has reached 400% as a maximum.

We must remember that the action of sunlight on the hematopietic system is followed by an increase in hemaglobin. This was proven by Naegeli, and Behring demonstrated an increased activity of respiration in the red globules submitted to the sun. Schlapfer has given the proof of photo activity of a photographic plate by means of its exposure to previously insulated blood. The last experiences of Sonne in Copenhagen have proved that under the action of radiation the temperature of the blood at a depth of more than one-third of an inch under the skin augments to about five degrees C.

From all these experiments must be drawn the conclusion that the light absorbed by the blood changes it into a receptacle of radiant energy. Transferred into the whole organism this energy hastens the ultra cellular forces of oxidation and reduction, thus modifying the whole metabolism.

Consequently, in this way, the organism exposed to the action of the sun is made better fit for the fight against infection, particularly against tuberculosis.

Chief among the general effects of the sunlight upon the body is the action of the sun's rays upon the skin. The skin is not only the natural clothing of the body but it provides for us a compact web of capillary vessels. These vessels by their contraction and dilatation constitute a kind of "peripheric heart," a regulator of the circulation of the blood. The skin is also an expansion of the nervous system; this closely woven net of sensory and sensitive nerves may be compared to a keyboard, the lightest touch upon which provokes resonances through the whole organism. The skin is not only an organ of protection, circulation and enervation, but also one of respiration and nutrition, since it gives off carbonic acid and water vapor, and absorbs oxygen. In conclusion the skin is an essential organ of elimination, and of greatest aid to the kidneys. It may be considered of more importance even than the kidney, for one whole kidney may be removed and life continue indefinitely, while if one-third of the cutaneous surface is destroyed, death ensues.

Air and light are as necessary to the skin as water to the scales of a fish; though the skin may be weakened by generations of the wearing of clothing, under the influence of air and sunlight it recovers the power to accomplish its vital functions. The very gradual formation of pigmentation gives the body proportionately increased resistance to cold and heat, and lessens the danger to any infection.

Air and sunlight should always be taken gradually, almost drop by drop, so to speak, when the thorax is exposed. The sun bath enlarges the capillaries and determines an afflux of blood toward the skin. This is a better regulator for the circulation than the best massage and the entire body finds again its natural harmony. The tonic power of the sun also manifests itself on the thoracic and abdominal organs; under its influence internal secretions accentuate, hemaglobin increases, digestive functions become regular, and strength generally is renewed. The sun acts not only on the physical side but on the mental as well. This is of great importance when we realize how much the mind reacts on the physical side.

One of the most important problems in heliotherapy is the dosage. On the knowledge or the

lack of knowledge of posology depends the results we may expect from sun cure, and no method demands such strict individualization as heliotherapy.

A very current mistake consists in thinking that the sun bath is more efficacious if prolonged or taken when the sun is hottest. Nature herself seems to warn us against this mistake. Only the lower less sensitive parts should be exposed. The further progress in isolation will be based upon observations of the measure in which the patient bears the treatment. Sun baths should never be taken during the heat of noon, especially at sea level where the ambient atmosphere tends to weaken the patient, producing congestion and annihilating the good effects of the sun's rays. The early hours of the morning are best.

To be most beneficial, the sun bath should create a sensation of profound wellbeing. The after effects should be invigorating. Needless to say, a patient with a high temperature should not be exposed to the sun.

Expensive palatial sanatoria are not necessary. Some simple place with plenty of court space, or any house with the addition of a large balcony would serve as well.

As prophylactic treatment sun cures are invaluable. Sun is, indeed, the sovereign remedy that a farsighted Nature has placed within the reach of all. It behooves us to make the most of it. The human body, everlastingly threatened by evil forces, must be constantly and effectually armed against them.

The treatment of diseases by sunlight is the newest of old things. Hypocrates, founder of medicine, practiced it systematically. The first clinic for heliotherapy of surgical tuberculosis was opened by Dr. A. Rollier at Leysin in 1903, and at last it would appear that his methods are to be followed throughout the world. Already France and Italy have practiced the sun cure and it is now being carried into Sunny Spain. There are many heliotherapeutic institutions on the Riviera, from San Remo to Cannes; the city of Lyons sends its sick children to the Villa Santa Maria at Cannes and the Italians have established a splendid institute at San Remo.

In our own country there is a large following at Perrysburg, N. Y., near Buffalo, and numerous smaller institutions throughout the country. Dr. Amstead has contributed papers on the sun cure of non-tuberculous diseases. We must not associate the sun cure, exclusively, with tuberculosis nor solely with the antiseptic power of sunlight. Recent work at Columbia University and Johns Hopkins Hospital has shown that sun light has potent influences upon nutrition, and is capable of preventing and curing rickets in a fashion hitherto unsuspected. Amstead refers to rickets, but at the time he was not well acquainted with this new American work.

Statistics from Madrid, Munich and Mexico City, teach us that tuberculosis may occur even at high altitudes. Dr. Rollier insists, in his most recent publication, upon the superior value of the early morning sun.

It is not necessarily light and heat which do the most good. In Canada it is light and cold which contributes to the superb Canadian physique and vitality. It has been only within a comparatively few years that we have known how to use the sun rays for therapeutic purposes. Heliotherapy is better carried on in high altitudes because it is usually above the clouds and smoke.

Ultra violet rays can be produced by artificial means. In Funsen's early work he used an ordinary arc light, which is very powerful in ultra violet rays, particularly if iron electrodes are used instead of carbon. Later on, lamps were constructed which deliver a light rich in ultra violet rays through a quartz tube or window. Estimations seem to show that more ultra violet rays per minute are produced by this means than would be obtained by exposure to direct sunlight at high altitudes.

The work which has been done on rickets with the quartz light therapy, demonstrates that marked changes in metabolism take place.

Internal and external tuberculosis are not only local ailments but must be regarded as manifestations of a general infection, which produces local symptoms and makes its appearance in local seats of disease. The therapy employed must give a general effect and completely restore the patient's normal constitutional condition and this must be coupled with a radical local treatment which will not hinder but promote the necessary rebuilding of the whole system.

Sun cure may be applied wherever the sun shines at sea level or in the mountains; anywhere where there are no dust particles and smoke to hinder the treatment, and where the treatment may be continued all the year around. This uninterrupted cure keeps the maintenance of the body at its maximum vitality.

In Pott's disease, instead of having patients in heavy plastered jackets which determine a very considerable atrophy not only of the skin and

muscle, but of the bone, they now have a simple arrangement of webbed straps which give sufficient immobilization while permitting free access of air and sun to the injured places. As soon as Roentgen examination shows the beginning of calcification of the vertebral block, the patient is placed in a ventral position. The thorax is supported on a triangular cushion on which the patient may lean his elbows. To this physiological position we attribute a very great importance. This same position was advocated about 100 years ago by two English doctors, Banting and Baumfeld, and it had long been abandoned; now it has again been given the consideration it deserves. This position augments the lordosis and tends to correct the pathological curvature. It protects the whole dorsal region and so develops and strengthens the muscles and ligaments.

Heliotherapy gives the most favorable results in cases of tubercular peritonitis. This requires most careful supervision, especially if it is accompanied by pulmonary and pleural complications.

Heliotherapy is the preeminently successful treatment for cervical adenitis, which may be cured without leaving any scars by one of the three processes: "melting" generally followed by aspiration, spontaneous resorption, or sclerosis. The first two mentioned occur more frequently than the third. The exclusive use of heliotherapy has the advantage of never giving rise to such accidents as radio-dermotitis.

Arthritis is one of the greatest benefited of all diseases. A man who had spent fifteen years traveling from one cure to another, from one part of the country to another, seeing physicians and taking baths, finally arrived at Miami Beach in a wheel chair and in constant pain. His hands were knotted and he used them with great difficulty. He spent three hours every morning lying on the sand with the sun pouring gently into his skin. A thin bathing suit and a head mask were his only covering. His condition was benefited steadily and surely, and at present writing, he swims, drives a motor car and a speed boat, walks without the help of a cane, and even dances occasionally.

Still's disease and other forms of arthritis do well here in Florida. A boy of fourteen, thin, sad-eyed, and drooping, spent six years in bed and wheel chair. There were long nights of excruciating pain and the days were hardly more endurable. Today after one winter and summer exposed to sunlight he has gained twenty-five pounds in weight; his cheeks are ruddy brown and his eyes bright. On account of bony ankylosis in his left hip joint, he still uses crutches, but the orthopedist thinks this is correctible. With the help of an inflated inner tube, he swims. When he first arrived in Miami he made two suicidal attempts, each time after a night of frightful suffering. Now this sunny little philosopher fairly radiates health and happiness.

An orthopedic hospital is being constructed on the beach at Miami by the Shriners, to which children will be sent from the Southern States.

Anemias, both primary and secondary, convalesce rapidly in this climate. It goes without saying that the etiological factors in the above disease should be removed where possible.

Pernicious anemia is a disease of unknown cause. A physician friend tells us of a case arriving from the West, unable to sit up in bed, even for a few minutes. Laboratory work here corroborated that in the West. In order to expose the spleen, a two-pieced bathing suit was donned and the patient was carried to the beach daily. Two months later the man walked into the doctor's office saying: "The sun has almost cured me, I am going home to sell my business and come back here to live." Unfortunately, he postponed selling his store and died there eighteen months later of pernicious anemia.

The climate at Miami Beach has as much power to cure as the sun. No dust particles nor smoke hinder the cure, for the beach is a long narrow strip of sand separated from Miami proper by a three-mile viaduct and causeway.

Thirty-four per cent of our children in the United States are more than seven per cent underweight. The writer has utilized heliotherapy in South Florida in his school nutrition classes, transporting these children to the beach, putting them into bathing suits, weighing them, making physicals each week on all not gaining properly, giving swimming lessons in the ocean or the swimming pools, and dairy food luncheons after the rub-downs. As many as a hundred and fifty children have been cared for in a single morning. Some of these were so-called "fatigue cases" with possible evidence of tuberculosis. These cases use up more calories than they store. They flit from one object to another as do the restless butterflies.

Finally, heliotherapy gives the most satisfactory results in all cases of lupus.

Results of sun-cure can only be considered val-

uable if they are lasting. Those who have suffered should henceforth live, as nearly as possible, under conditions nearly approaching those which determined the cure. To avoid relapse, a patient should neither take up an unhealthy occupation, nor re-enter an unsanitary lodging, but rather choose a vocation that promises reasonably healthy conditions of life. Market gardening would be a beneficial work for an ex-patient, in a good climate, of course.

Sun and air should be given a larger place in our daily lives. Defective housing has played a large part in the illness of children. There is an old saying: "Where the sun enters, the doctor does not go," and contains a rule of life that should prove invaluable in its application.

MAGNESIUM SULPHATE IN ECLAMPSIA*

A. D. Stollenwerck, M.D.,
Jacksonville

In the treatment of eclampsia, it is universally agreed, that two indications present themselves: 1, to combat the effect of the toxins upon the central nervous system; 2, to eliminate these toxins.

Since the employment of magnesium sulphate to control the convulsions of tetanus, much work has been developed in its use in the convulsions of eclampsia, and the explanations of its action, in meeting the two above indications, seem to be found in the following reports:

Blake claims for it, in tetanus, "a marked effect in restraining convulsions and relieving pain, thereby conserving strength, and preventing excessive metabolism and heat production; that spasm of the muscles of mastication and deglutition is at least lessened; that its action is continued for a considerable period (29 to 34 hours), without depressing action on the heart muscle, and finally, that repeated injections produce no harmful effects, except the inhibition of the bladder, and subsequent need for catheterization."

Peck and Meltzer report on its use for the production of anæsthesia and conclude that "the employment of intravenous injections of magnesium sulphate as an anæsthetic may prove to be, indeed, a practicable and advantageous method, because, in the first place, it may cause simultaneously a moderate relaxation of the muscular mechanism, and secondly, because the untoward effects can be readily reversed by the administration of a solution of calcium chloride."

Weston and Howard report on their use of this salt in excited stages that they found "In 82.7 per cent of the cases, the sedative action was prompt, the patient becoming quiet after 15 or 30 minutes, and sleeping from 5 to 7 hours. In a few instances, the patient became quiet but did not sleep, the effect persisted from 5 to 10 hours."

The above seems to meet the first indication—the effect of the toxins upon the central nervous system. As to the second indication, the elimination of the toxins, magnesium sulphate seems to act in the blood-stream like it does in the intestinal tract, viz., to extract fluid from the tissues, thus reducing the edema. In reducing the edema of the brain, the coma clears up more rapidly. This increase in the watery elements of the blood increases the kidney output, and thus eliminates the toxins.

We regret that we have only one case treated by this method to report, and naturally, you may feel that it is not at all conclusive, but it occurred immediately after the appearance of a report of seventeen cases by Lazard, and finding our result so strikingly like his, we do not feel that ours was entirely accidental.

The patient—white, married, eighteen years of age—was brought into the hospital on the night of March 8th, 1925, in an unconscious condition, with a history of having had four convulsions. The husband said that early that morning the patient complained of a severe headache, which became worse, and she went to bed in a stupor. This being the only time the patient complained of any illness during her pregnancy. About noon a midwife was called, who gave her a dose of salts, and advised that they send for a doctor. About 4 p.m. she had a convulsion which lasted four or five minutes. At 6:30 she had another, and on her journey to the hospital she had a third. About twenty minutes after her admission she had another convulsion which lasted five minutes. There was edema of the face and eyelids, and lower extremities. The blood-pressure was 160/100, and a self-evident diagnosis of eclampsia was made.

At 9:40 p.m. she was given one-quarter morphine sulphate, by hypodermic, and at 10 o'clock 20 c.c. of a 10 per cent solution of magnesium sulphate was ordered, intravenously, but through a misunderstanding of the order, she received a 20 per cent solution instead, so the mag. sulph.

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*Read before the Duval County Hospital Staff Meeting, August 18th, 1925.

was not repeated. At 10:30, 500 c.c. of normal salt solution was given under her skin, and repeated at 4 a.m. On the morning following admission, the blood pressure had fallen to 145/100, she was passing a good amount of urine involuntarily, and the mental condition was that of semi-stupor. She could be aroused easily, would answer questions, and then return to a light sleep. At 2 p.m. consciousness returned and the patient asked for the bedpan. There were no further convulsions. She was put upon a milk diet, with water freely. We purposely omitted any of the usual treatments, as we did not want to disturb her with stomach washings, colonic irrigations, etc., and further wanted to test the efficiency of the magnesium sulphate. On March 12th she again complained of headache. Her blood pressure had risen to 160/100. She was given 10 c.c. of 10 per cent mag. sulph. intramuscularly. The following day she went into labor, and later the blood pressure was 140/100. Her labor was normal, her infant normal, and her puerperium uneventful.

The urine report, from a specimen taken the morning after admission, showed 3 plus albumen, and hyaline casts. On the 11th—two days later—showed 1 plus albumen, and no casts in ten fields. On the 18th, there was a faint trace of albumen. This, being taken, 5 days postpartal.

The patient was advised that she should remain longer for treatment and it was our intention to transfer her to the medical department, but she insisted upon going home, and signed her release on March 26th.

OBSERVATIONS ON A VISIT TO SOME EUROPEAN MEDICAL CENTERS*

EDWARD JELKS, M.D.,
Jacksonville, Florida.

In giving an account of my recent visit to some European medical centers, I wish to state that what I shall say is based altogether on my own observations. Some one else, no doubt, would have gathered quite different ideas. In London I visited St. Bartholomew, Guy's, and Westminster Hospitals; in Leeds, The Leeds General Infirmary; in Paris, Hospital de-la-Salpetriere; in Strasbough, The University Hospital.

The fact that impressed me most about these institutions was the tremendous degree to which they are influenced, I might almost say limited, by precedent and the past. The countries themselves seem to have been born, to have grown to their present condition, rather than to have been created or planned. Many things of everyday life are reminders of what has gone before. Even the names of streets often tell fascinating stories. Wood street, Bread street, Milk street, tell us that in times long gone, the Londoners on certain days of the week went to these streets to purchase the household articles of their simple life. The best markets to get milk were on Milk street; bread on Bread street and so forth and so on. In spite of a fire which completely destroyed this section of the city, almost three centuries ago, we still enjoy the fascination of walking these streets which continue to bear their original names. In Paris the names of the old gates of the mediæval city still denote where entered for hundreds of years kings, conquerors, serfs, artists, mobs and all manner of people from the far countries of the earth.

The hospitals also possess this charm of age. St. Bartholomew or Barts in London, dates back to the middle ages. It was founded in 1123 as part of an Augustian Priory. Rahere, its founder, lies in the beautiful early English chapel which he built as the center of his institution; an institution which has stood for the best in religion, education, and medicine during eight hundred years. You may be sure that the British medical student digests its eight centuries of medical history. A third-year student took me from the old Priory church, holding the founder's remains, to the modern buildings of the up-to-date, out-patient department. This young man told me with pride, that at Barts, Owen and Abernathy had taught. It was here Harvey made his discovery of the circulation of the blood. These men are proud of their hospitals, and well they may be, since most of them can boast of the ripe old age of at least a hundred years. What can be more inspiring to a visitor and student than knowing Hopital de-la-Salpetriere? It was built by Louis XIII in the 17th century for an arsenal, but was soon converted into a medical home for old women, chiefly for those with mental diseases. It was here during the past century that Charcot, of joint fame, took his internship; later he was appointed chief of the clinic and for many years filled the chair of neurology which had been created for him. From Charcot and his associates we have received some of our

*Read before the Riverside Hospital Staff, August 26, 1925.

earliest and best information concerning diseases of joints and the nervous system. Today one sees in the wards, in the corridors and in the open courts hundreds of old women with almost every conceivable type of deforming arthritis and paralysis. There is now a modern surgical hospital connected with this old institution.

We must not forget the medical museums. How pleasantly I remember the morning I spent in the Hunterian Museum of the Royal College of Surgeons. Our war of independence had hardly closed when John Hunter, who died in 1793, had begun this museum. It still treasures his original specimens, labeled in his own handwriting. In the central gallery is an impressive statue of this great founder. Five large rooms with cabinets along all the wall space and galleries above are filled with specimens. There are skulls from almost every living tribe or race and some of pre-historic man. Anatomical dissections minutely labeled are preserved. I must recall that never before had I seen such wonderful specimens. Then there are similar pathological displays. There are many models reconstructed from microscopical observations. One impressive work of this nature is series of models of cell nuclei showing chromosomes undergoing division. Illustrative of the magnitude of the museum is the fact that in 1871 there were catalogued 1005 urinary calculi, most of which have been analyzed chemically. How many there are today I did not find out. Happily this museum is more than a mere medical curiosity. Here I saw many groups of students, accompanied by their instructors in some instances, studying at first hand the collections of more than one hundred years of British medical and surgical history.

Now what influence do we expect such a medical history and environment to have upon the profession of England and France? These countries have developed certain ideas and methods which they find difficult to change. Apparently they like to repeat what they have done before. They prefer not to undertake the new and untried. The old is good, they say. Wherefore, precedence and custom have circumscribed their medical institutions.

The younger doctor must adapt himself to the old ways. He must come from a certain school and pass through a prescribed training and experience in order to be recognized. The younger men are held back, especially those of other countries. A physician in Paris told me that this is one of the greatest hinderances to medical progress in France. A notable exception to this custom occurred last year when one of the oldest hospitals in London appointed on its staff a surgeon from a British colony. I was told that this hospital had appointed an outsider very few times in its hundreds of years of existence. To arrive, a man must follow the pathway along which he is directed. One would think this must be a hinderance to the originality of the individual and to the best interest of the institution.

But there is a much brighter side to this practice of holding fast to the old. Lessons of great value have been learned from years of experience. Time has tried and proven them. Therefore, these are adhered to while the profession is very slow to accept the untried or unproved. This must result in the avoiding of many mistakes that are made by those who accept too quickly. They give proper importance to the fundamentals of medicine. They stress the training of the senses to detect and the development of the mind to interpret correctly. They do not lay so much stress in diagnosis as we do upon laboratory findings. Illustrative of their reliance upon the clinical history and examination is the reply of a British neurological surgeon to my inquiry as to whether they used ventriculorrhaphy in intracranial diagnosis. In a half serious manner he replied, "No, we are clinicians over here." At least clinicians are what they aspire to be. So far as I could observe they make as high percentage of correct pre-operative diagnosis as we do.

I have asked myself many times, "What is to be the future progress of medicine in these countries?" In a spirit of humility for our country I express the opinion that they look for America to take the lead in medical progress. They say, you have laboratories for research, funds for needed equipment, endowment which enable men to devote their lives to investigations and you have a nation of peace. With pride in our leaders, I can see they already recognize that America has established a worthy position in the medical world. Two surgeons said to me when operating upon goiters, "I hesitate to do this operation in the presence of one who comes from the country of Crile."

Not only the profession but the laity will be awakened to our medical methods. In the June issue of the English Review, is an article entitled "Medical Methods in America and England." In this the author presents, through a layman's

periodical the points wherein he considers America more advanced. Doubtless these old countries will not accept our methods quickly, but I think they will choose and prove their value; then add them to their already superior schools of medicine and surgery. We will continue to learn from Europe new ideas in medicine; but I think most of all we should learn from her to cherish the history of our institutions, the memory of our leaders in medicine. We should stress more and more those fundamentals which have been proven by time and experience. Let us learn from our friend across the sea that we have no other aids in medicine so valuable as the senses and reason.

TYPHOID FEVER*

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The clinical history of an attack of typhoid fever is divided into weekly periods. While these are not absolutely accurate in time, it is a convenient division and one which roughly corresponds with the pathological process in Peyer's patches. In the average uncomplicated case of moderate severity, the first week is the period of the increasing severity of all symptoms, the second and third weeks constitute the period of the height of the disease, the fourth week is a period of decline of all symptoms and the fifth week marks the beginning of convalescence.

The exact time of the incubation period is still a matter of some speculation; the average time appears to be from 10 to 14 days, but it may be as early as two days and the invasion of the intestinal wall may be indefinitely delayed as is seen in the case of apparently healthy carriers. In laboratory infections, both experimental and accidental, Jennings and Morse report an average time of 14 days, at the same time mentioning cases which developed in four, five and six days. Usually no symptoms mark this period, the onset being so insidious as not to attract the patient's attention, but subsequently a hisory of lassitude, loss of appetite and some headache or other pain can frequently be obtained. The prodromes are followed by the onset of fever and a gradual increase of all symptoms so that the patient takes to his bed. This event is commonly considered the first day of the invasion.

The picture then develops about as follows: There is chilliness followed by fever, occasionally a real chill; great fatigue, dizziness, loss of appetite, abdominal pain and discomfort, occasionally vomiting, usually constipation, maybe diarrhœa, but this is usually induced by the use of some laxative. There is headache; this is severe and does not yield to treatment; nose bleed is fairly common on the second or third day. The temperature shows an evening rise with morning remissions gaining a degree or thereabouts each day over the day before so that by the end of the week it reaches 103 or 104. The pulse is soft and full and in comparison to the temperature and the evident severity of the attack the rate is low. There is restlessness, the skin is hot and dry, there are occasional sweats. The thirst and anorexia increase, the abdomen may be somewhat distended, there may be some pain or a feeling of discomfort in the lower right quadrant, palpation discovers movement of gas in the colon. If there has been constipation it persists or there may be one or two loose stools daily. The tongue is moist and coated, the breath fœtid, there may be a slight dry cough or even some dyspnœa. All symptoms increase daily in severity. This occupies a space of about seven days, the first week of the disease.

Usually between the seventh and twelfth day the rose spots appear on the skin of the abdomen and chest. The rash is variable but usually consists of only a few of the spots at a time, occurring in crops; there may be so few in any one crop as to escape notice entirely. The temperature remains high, the morning remissions becoming less; the pulse rate may increase somewhat; dicrotism is commonly seen. The headache may persist, but usually begins to diminish, the patient becoming dull and apathetic. In severe cases there may be delirium at night. Lips are dry and crack easily, tongue coated and becomes dry and discolored. If diarrhœa has been present the pea soup stool makes its appearance. Constipation is equally frequent and demands measures for its relief. The urine becomes scanty and may show albumen and a few casts. The spleen becomes enlarged. This is the second week of typhoid and it may end the period of high fever and the decline may begin. This, however, is unusual except in the typhoid of children. During this period death may occur due to intense toxemia, hemorrhage or perforation.

During the third week the symptoms continue, the patient gradually failing under the invasion. Towards the end of this period the temperature begins to show increased morning remissions and

*Read before the Dade County Medical Society.

the pulse rate increases and keeps pace with the temperature chart. This is the period of the greatest danger from hemorrhage, perforation, broncho-pneumonia and other grave complications. Progressive asthenia or any of the complications can cause death.

The fourth week should be a period of the decline of all symptoms. The morning remissions in temperature become greater, the evening rise being less, so that there is a loss in temperature of about a degree daily, the reverse of the process during the first week. This fall by lysis is the rule but there are cases in which the temperature falls by crisis. Sudden falls should, however, be looked upon with suspicion as they may usher in a hemorrhage or collapse. The pulse becomes slower, the tongue moistens and the general condition improves. A rapid pulse at this stage denotes a myocardial insufficiency and exhaustion.

In the fifth week convalescence begins, the temperature falls to normal with excursions below the normal line, the appetite returns, nutrition improves. There may be desquammation and the hair commonly falls out. The spleen should no longer be palpable; if it remains large it is an indication that a relapse is probable. Slight recrudescences in the temperature are frequent; there may be a rise to 100 to 102 following some slight excitement or minor digestive disturbance which may last for a day or two.

This is in brief the usual course of the disease. The whole course is subject to the widest variations in the onset, the severity and the duration of the attack; again the whole burden of the attack may fall upon one system or organ, giving rise to a specialized character of the symptoms and course. Any intercurrent complication may take precedence and cloud the picture.

Instead of the usual insidious onset the onset may be abrupt. After no or insignificant prodromal symptoms the temperature may rise sharply to 102 or 103 with or without chill followed by sharp remissions or even intermission of the temperature during the first week. It may begin with pharyngeal symptoms and sore throat with swollen tonsils, naso-pharyngeal catarrh or infections in the accessory sinuses may be the earliest symptoms of any disease. There is an abdominal type of onset, sudden fever with nausea and vomiting accompanied by abdominal pain and rigidity closely simulating gastritis, appendicitis or a general peritonitis. There is a respiratory type in which there is an initial bronchitis of considerable severity, high fever with sweats, a rapid pulse and respiration with the physical signs of a general bronchitis which is very difficult to differentiate from pulmonary tuberculosis. In some of these cases there may be a rapidly developing pneumonia with a chill. The typhoid bacillus has been recovered from the lung in some of these cases, in others there would seem to have been a coincident infection. There is a renal type beginning with every evidence of an acute nephritis, scanty urine, albumin, blood and casts. And a nervous type closely simulating meningitis beginning with intense headache, vomiting, delirium, photophobia, retraction of the head and a positive Koenig's sign or drowsiness, stupor and coma may develop in a day or two. Cases beginning with maniacal psychosis and delusional states have been reported.

SPECIAL SYMPTOMS

The temperature curve is subject to great irregularities but in the main it is fairly characteristic and constitutes an important sign. The rise with the ascending oscillations increasing about a degree each day of the early part of the first week is frequently not seen, the onset is too insidious and we do not see our patients until the condition is well advanced. It is rare that the period of increasing fever lasts beyond the eighth day. During the second and third weeks the temperature remains at a high level with considerable daily remissions which tend to decrease during the third week. The fourth week brings increasing daily remissions and the period of the falling oscillations until the normal is reached. This period of descending oscillation is fairly constant, but cases have been observed to fall by crisis. The temperature chart is considerably modified by cold bathing, etc., but a sudden temperature change usually precedes or accompanies the onset of some complication. Severe hemorrhage commonly reduces the temperature several degrees, perforation may lower or raise it; pus infections cause wide variations, thrombo phlebitis is a common cause of such changes in the third and fourth weeks. The rise in temperature may begin several days before the local manifestations of the thrombosis become apparent. Hypothermia has been observed in protracted cases, sometimes persisting for a week or more. Complications and undemonstrable causes may and frequently do cause irregular oscillations of the temperature curve and serve to delay convalescence indefinitely. Recrudescence has been mentioned; the cause may be

slight or it may not be demonstrable. There will be an elevation of temperature to anywhere from 100 to 102 which persists for a day or so to a week and then subsides. True relapse is a question of reinfection. It occurs after the normal temperature has been regained for some days, the curve resembles in all ways the curve of the original infection except that the course is apt to be shorter. Relapse may occur before the temperature has reached normal in the original infection in which case it is called an intercurrent relapse.

Chills.—The chill has no particular significance at the onset of typhoid, but during the course of the disease they may usher in a complication of grave importance. They not infrequently result from the use of antipyrine and they commonly follow the hypodermic use of vaccine.

Pulse.—The characteristic pulse of early typhoid is slow in comparison to the fever. It tends toward dicrotism rather rapidly. After the second week it becomes more rapid and follows more or less closely the temperature curve. The pulse curve is modified greatly by hemorrhage and perforation.

The Blood.—During the first few days the number of the red cells remains fairly constant, but there is soon a decrease which is accompanied by a corresponding decrease in the Hb index.

White Cells.—Leucopœnia is the rule and is usually an early symptom, the differential count shows a progressive reduction in the per cent of polys and a corresponding increase in the per cent of monos, particularly the large forms. During convalescence, a moderate leucocytosis may be caused by some secondary infection. Perforation is usually marked by a leucocytosis, with the onset of peritonitis, this is followed by a very rapid fall. In some cases where the patient is overwhelmed by the toxemia, the leucocytosis following perforation does not occur.

Rash.—This symptom is pathognomonic. It occurs from the seventh to the twelfth day. The spots are discrete, slightly raised, rose-colored and they disappear under light pressure. They are transient, occurring in successive crops, usually not more than 20 in each crop and frequently only five or six at any one time, each crop disappearing in 24 hours or less. Our experience leads us to believe that in the colored race, while the rash has somewhat different characteristics than in the white, it is more easily seen. We have observed small discrete glistening spots, the color of which is indistinguishable, which are transient, occur in successive crops, disappear under light pressure, and are in all ways analagous to the rose spots, except in color, and are easily seen on account of their glistening appearance.

Tongue and Mouth.—The tongue in the early stages is covered with white fur and is moist, later it becomes dry and discolored. The oral secretions are diminished and sordes is apt to appear.

Cough.—Bronchitis is a fairly common early feature of typhoid, usually it is confined to the upper bronchi and gives rise to no symptoms other than a dry cough.

Constipation and diarrhœa are about equally common and they may alternate. If diarrhœa persists, the stools become large, thin, dull yellow in color and very offensive, during the second week, the so-called pea soup stool. Severe diarrhœa is an unfavorable symptom; it drains the body fluids, dries up the tongue and oral secretions, interferes with nutrition and aggravates the exhaustion and wasting.

Abdominal Tenderness and Pain.—This is usually present in some degree, it may be general or limited to the right lower quadrant. The pathology of the disease is a sufficient explanation for the existence of this symptom. As a rule it is not severe; it may be accompanied by rigidity and distension. There may be pain and tenderness over the enlarged spleen. Unusual pain may indicate perforation or hemorrhage.

Tympanites is usually present; if it is severe it may embarrass respiration and cardiac action. Under these conditions it interferes seriously with nutrition and predisposes to hemorrhage.

Spleen.—This organ is always enlarged, but it may not become palpable for several days after the onset. If the enlargement does not subside by or before the time the temperature falls to normal it is a valuable index of an impending relapse.

Headache.—This is a nearly constant early symptom. It varies in location, intensity and character, usually it persists through the first week and into the second and is followed by a state of mental torpor. If it persists beyond the second week it may indicate an infection of the meninges.

Diagnosis.

If we examine closely this mass of symptoms and the varients we are led to the following conclusions:

First. That the symptom complex varies to such an extent that in many mild atypical cases

the so-called pathognomonic symptoms do not occur or are so mild that they are not observed, while on the other hand no combination of symptoms is impossible.

Second. The symptoms which may be considered as distinctive are limited to

1. The rash, which is probably always present, but not always easy of observation.

2. Headache, which is fairly constant.

3. The temperature curve, which is a very valuable sign in retrospect.

4. Changes in the blood picture.

We should consider the possibility of typhoid in all acute febrile conditions and we have learned to suspect it in any case of prolonged fever not easily explainable on other grounds. An analysis of the symptom complex presenting may lead us to assume this diagnosis early in the disease, but it is perfectly evident that the diagnosis of typhoid fever can only be made or substantiated by the laboratory findings.

The diazzo reaction in the first two weeks is indicative but not positive. This reaction is found occasionally in many other conditions, among which can be mentioned diphtheria, erysipelas, pneumonia, scarletine typhus, the cachectic states like cancer, cirrhosis, syphilis, malaria and the grave anæmias.

The Widal test is specific if properly performed, but the agglutinating power of the blood is frequently very slow in developing; also it must be remembered in this connection that persons who have received the typhoid vaccination will show a positive or partial reaction.

The Blood Examination.—Repeated examinations showing a rapidly falling Hb index with a corresponding decrease in the red cells together with a develop in leucopœnia, the differential count showing a decreasing of polys and an increasing percentage of the large monos is very suggestive.

The Blood Culture.—This is the best evidence of all. The recovery of the typhoid bacilli from the blood is very convincing, and the fact that it will give the results early in the condition adds to its value.

Isolation of the bacilli from the stool is also positive evidence, but the inevitable mixed infection of all stool specimens complicates the situation, making the technique very difficult and the returns frequently unsatisfactory. It is easier and equally valuable from a diagnostic standpoint to recover the bacilli from the urine.

REPORT OF CASES

Case 1. Female, married, one child, age 23, fairly well nourished. Presenting symptoms: Sudden attack of abdominal pain, localizing in the right illiac fossa, boardlike rigidity of the right rectus, less tension on the left side, marked tenderness over McBurney's point accompanied by vomiting. Temperature 103.4, pulse 118, respiration 26. Physical examination, chest negative; absolute absence of prodromal symptoms, constipation, history of previous attacks of a similar nature. Working diagnosis: Acute abdomen, probably appendix. Blood count ordered with following report: RBC 4,418,000; Hb 86%. WBC 2800, polys 40 monos 58 trans 2. On the receipt of this report a Widal was ordered and was reported positive. This made the diagnosis.

This case ran a very mild course and was discharged from the hospital after only 16 days.

It illustrates the abrupt type of onset with abdominal symptoms. The presenting picture was that of an acute exacerbation of a chronic appendix. These symptoms, however, gave place to a dull apathy in something less than 24 hours.

Case 2. Man, age 33, married, one child, well nourished. For one week prior to June 20 complained of painful stiff neck and feeling of uselessness. No fever noticed until June 24. First seen June 24; temperature 103.4, pulse 90, respiration 20. At that time the physical examination of the chest and heart was entirely negative, the abdomen was moderately tender, gas movements were caused in the colon by palpation, the spleen was definitely palpable, and a few rose spots were observed. The tongue was coated, the appetite was gone and the laboratory reported a partial agglutination.

This man was admitted to the hospital June 25. On the twenty-sixth the hospital laboratory reported the following blood count: RBC 3,730,000, Hb 70, WBC 5750, polys 80, monos 20. On the 3rd of July the Widal was reported as negative and it did not become positive until the 25th and only then after the administration of typhoid vaccine. Albumin appeared in the urine for the first time on July 10, sixteen days after admission. On July 26, thirty-one days after admission, the blood count showed RBC 2,090,000, Hb 40, WBC 3,000, polys 60, monos 40. At about the same date the laboratory reported the recovery of typhoid bacilli from the urine.

The temperature curve in this case is very interesting. On admission to the hospital there

were daily oscillations of 1½ to 2 degrees, the temperature remaining between 101 and 103.6 for four days, then there was a rise with about the same sort of oscillations until on the 7th day it was 104.2. For four days more it remained at about this level. The chart is modified by cold sponging, of course, so that the oscillations remain about the same. On the 12th day there is a sudden drop of 2½ degrees accompanied by a rise in the pulse caused by a hemorrhage. Following this returned to about 103 and the oscillations became somewhat less and remained so for three days. During the whole of the next week the temperature remained at about this level, but the daily oscillations increased to about 2 degrees. In spite of the fact that on the sixteenth day there was another but smaller hemorrhage. From the twenty-third to the twenty-sixth days the temperature dropped daily about 1 degree each day. On the twenty-seventh day there was a sudden drop of 4½ degrees followed by hemorrhage and collapse; following this the recovery was accompanied by a rise of temperature of 103.8 on the twenty-eighth day and 104.6 on the twenty-ninth and remained for three days at a high daily level of about 104. On the thirty-third day there was a sudden drop of 6 degrees. This was not accompanied by any demonstrable complication. By the following evening it had again gone back to 103, after which it remained steady from 102 to 103.6 for two days. On the thirty-sixth day moist rales appeared over the right chest and on the morning of the thirty-seventh there was an area of consolidation in the right lower lobe posteriorly, broncho-pneumonia developed and persisted for five days when the temperature began to drop by lysis. There were slight recrudescences on the forty-sixth and forty-ninth days, the cause of which was undetermined but which lasted less than 24 hours and the man was discharged on the fifty-fifth day, after having had a normal temperature for seven days.

Looking Backward Over Fifty Years of Health Work in Florida

JOSEPH Y. PORTER, M.D.,
Former State Health Officer of Florida,
1889 - 1917

Serial No. 4.

The Legislature of 1889 convened in biennial session in April of that year. At which session separate resolutions were passed by both the Senate and the House, expressing to Dr. Porter the thanks and appreciation of the people of Florida through their Representative for his untiring energy and devotion to the sick of Jacksonville during the epidemic of yellow fever in Jacksonville and other cities of the state in the fall of 1888. They are mementoes greatly valued and sacredly cherished, carrying memories of incidents of loving sacrifice and devotion of a grief-stricken people.

The members for the State Board of Health provided for in the Legislative Act referred to, were almost immediately appointed by Governor Fleming, and Dr. R. P. Daniel of Jacksonville, with Messrs. W. K. Hyer of Pensacola and William B. Henderson of Tampa were the nominees. On organizing, Dr. Daniel was chosen as President of the board and the employment of State Health Officer was offered to Dr. Joseph Y. Porter of Key West, an officer of the Medical Corps of the United States Army, who had been relieved from active duty in the army to await permanent retirement. A tentative opinion had been secured before the offer was made, from prominent legal authorities, that such employment would in no wise conflict with either Federal or state laws, for the reason that the position of health officer was not an office of the state in the strict meaning of the Constitution. An officer of the state must be either elected by the people, or appointed by the Governor, and in this instance the State Health Officer was neither, but was an employee of the board, at the board's discretion and sufferance. Dr. Porter was in continuous service from 1889 to 1917, when he resigned to enter the active service of the army in the World War.

Looking to the prevention of contagious disease entering the state by the way of the sea—maritime quarantine regulations—and specifying the duties of the State Health Officer, with no

precedents to follow or guide to direct administration of a methodical character, except those under which the Monroe County Board of Health and the Escambia County Board of Health had been operating, the task was a most difficult one; because seemingly the whole thought of the members of the board in health matters at that time was centered upon one subject, viz: to prevent yellow fever from again entering the state from Cuba, for this was apparent, as other equally as important matters pertaining to the general health of the citizens were held in abeyance for several years after. As will be mentioned elsewhere, the seaboard counties had quarantine boards of health, which actively operated in boarding of vessels entering the several ports of the counties during the summer season, but with the exception of Pensacola and Key West there was no systematic procedure of management. It became necessary, therefore, to adopt practical methods, based on a supposed knowledge of maritime sanitation at that time, that the health of the citizens of the state might be secured by uniform rules and regulations, applicable alike to all sections of the seaboard of the state. This likewise was a perplexing undertaking, because of divergent interests arising in different portions of the long coast line, for it must not be forgotten that Florida has a twelve-hundred-mile coast exposure to the tropical countries to the south, from which yellow fever had invariably been introduced.

As soon as money was available (for the first appropriation to cover two years of sanitary activity was only fifty thousand dollars), the State Board of Health built and equipped with modern disinfecting machinery approved of at that time, quarantine stations at the mouth of Tampa Bay, at Fernandina, Pensacola and at Key West. As will be mentioned hereafter in this story, Pensacola quarantine had already received considerable donations in money from the former Federal Board—the National Board of Health—and was functioning satisfactorily. Quarantine inspection stations were also designated for other minor ports of entry at that time, at Miami, Boca Grande, Charlotte Harbor, Cedar Keys, Anclote, and at St. Andrews Bay on the West Coast. These quarantine stations built by the funds of the State Board of Health continued to operate efficiently until 1901, when, as will be told hereafter, by an Act of the Legislature of that year, they were sold to the United States Treasury Department, and have since been conducted by the United States Public Health Service. Money received from fees of inspection and disinfection served to defray the expenses of operation of these stations, thus lessening the maintenance cost to the state. The completion of the discovery by Nott and Finlay of the mosquito of a certain species, as the carrying host of yellow fever, and further establishing the fact by human experimentation, that "fomites" of yellow fever did not exist, made it unnecessary that expensive plants of disinfecting machinery should be extended and erected along the coast of Florida. The original method of fumigation against insects, by burning sulphur in pots in holds and living quarters of vessels from known disease-infected ports, is answering every requirement of protection.

The Presidents of the State Board of Health to the present time—May, 1925—have been Dr. R. P. Daniel of Jacksonville, Messrs. Wm. B. Henderson of Tampa, E. M. Hendry of Tampa, Frank J. Fearnside of Palatka, C. T. Frecker of Tampa, Joe Earman of West Palm Beach, and Dr. C. T. Young of Plant City, the present incumbent.

The State Health Officers from the organization to the present, have been Dr. Joseph Y. Porter of Key West, Florida, from 1889 to 1917; Dr. W. H. Cox of Brooksville, Dr. Ralph D. Green of Greenville, and Dr. R. C. Turck of Jacksonville, who is the present State Health Officer.

One of the first signs of general interest in sanitation on the part of the citizens of Florida as a community, was shown in the late eighties, during the latter part of the last century. The disastrous fire at Key West in the spring of 1886 had destroyed the whole of the business part of the city and a small portion of the residential. When rebuilding, the State Health Officer suggested to the mayor, then Hon. (Dr.) J. W. V. R. Plummer, that an effort should be made to install a system of sewerage before buildings were constructed, for the repair work to the city was rapidly progressing. Acting on that suggestion, Col. George E. Waring, an eminent sanitarian and civil engineer of Rhode Island, was invited by the mayor to visit Key West. Colonel Waring's efforts in perfecting a system of sanitary disposal of domestic wastes had then attracted attention for small cities and towns, which in working out had given satisfaction. Colonel Waring made not an instrumental survey of the city and island, but suggested a tentative plan by which sewage could be treated through

the septic tank plan and afterwards emptied into the sea by pumping. Funds were lacking, however, to carry out his recommendations, and consequently nothing was done at that time. The plan recommended by Colonel Waring, however, attracted the attention of the authorities at Tallahassee, and a septic tank system with trickling basins was installed at Tallahassee, which with increased units, as was demanded by the growth of the city, has operated successfully. Havana, Cuba, invited Colonel Waring to suggest improvement, for the sewerage system of that city was anything but satisfactory at that time. In making the survey of needed improvements, Colonel Waring unfortunately became infected with yellow fever, which developed on steamer going to New York, where he died a few days afterwards. Colonel Waring was the first martyr to a study in scientific sanitary work in Havana, and Dr. Jessee Lazier of Surgeon Walter Reed's organization was the second victim to a human demonstration of the transmission of yellow fever through the mosquito.

One of the great advances in marine sanitation in the quarantine system of the state occurred in the spring of 1887, when a steamship line was projected by the Plant Investment Company, Mr. H. B. Plant as President, for weekly communication between Tampa and Havana during the summer months of the year. The steamer "Mascotte" had been built at Philadelphia in the fall of 1885 and had been placed on the run between Tampa and Havana the following winter. The success of the venture had been so profitable as to induce the Plant Investment Company to make an effort to continue the service throughout the year. The Monroe County Board of Health had permitted communication with Key West and Havana the previous summer under stringent conditions of immunity of passengers and crew to yellow fever. Trade was not interrupted and as the passenger service was principally of the class who had experienced an attack of yellow fever, and could be vouched for to that effect, the danger of introducing yellow fever from Havana into Key West was reduced to a negligible quantity. The Plant Investment Company wished to avail themselves of a similar privilege and permit. The Monroe County Board of Health was willing because it had already tried out the plan, but the neighboring ports of Tampa and further up the peninsula, Jacksonville and Savannah, together with numerous railway points, demurred and strenuously objected to the Monroe County scheme. A consultation of county and city health officers was called at Ballast Point, in Tampa Bay, in the spring of 1887, and representatives from Savannah, Jacksonville, Palatka, Sanford, Orlando and Tampa, and the principal cities and counties along the railway, met and discussed the situation, going very minutely into the probable danger of allowing communication with Cuba during the summer months. It was finally decided to adopt the Monroe County method and regulations of quarantine, and thus came into operation the "immune card" system of passenger travel and commercial trade between the State of Florida and the Island of Cuba during the summer months of the year, by the Plant Steamship Company, under the sanitary supervision of the Monroe County Board of Health.

Following the organization specified by the statute creating the board, an enlargement of administration was adopted by dividing the state into districts proportionate to population and appointing a medical man as an assistant to the State Health Officer, who should supervise the sanitary conditions of the district for which he had been selected. Most often an assistant was appointed for each county, but not infrequently two or more counties were combined into one district. These appointments were made conditional upon a professional examination, showing particular fitness and knowledge of preventive medicine by a committee of three disinterested physicians, who volunteered for the service. The compensation was contingent upon the service given, which included a per diem and travelling expenses when away from home. The system worked admirably, as monthly reports of the sanitary status of neighborhoods was furnished the board, which at the end of the year made valuable statistical health work, both instructive and interesting.

The next step in progressive sanitation was the organization in a similar manner of District Health Nurses, who, after successful mental examination conducted as that for health assistants, were assigned to different portions of the state, to oversee, instruct and direct a care of tuberculosis patients, and give information likewise to prospective mothers, for prenatal conditions, and in child welfare. The nurses were given a monthly salary with travelling expenses. The two plans of administration met with such satisfactory success that the scheme has never been materially altered, except in minor details, since the primary organization of the board.

(To be Continued)

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THE WRITING OF ABSTRACTS FOR THE JOURNAL

Shortly after the annual meeting of the Florida Medical Association at St. Petersburg in May, 1925, the writer was selected by the newly elected Secretary and Editor of THE JOURNAL to establish a Department of Collaboration. Letters were addressed to many members of the Association soliciting cooperation and active collaborative service. Responses were hearty and enthusiastic. Additional correspondence welcomed wholeheartedly the members willing to assume the roll as abstractors of articles of special and general interest coming to their office. All of which was very encouraging and led me to believe that the department was established and "ready to go".

In former correspondence I appealed to you individually and personally, and possibly it might be better to do that now, but it occurs to me that a collective appeal through THE JOURNAL would reach the cooperative consideration of the collaborating staff and relieve the busy editor of addressing collaborators and urging the early mailing of abstracts.

The abstracting department of THE JOURNAL is worthy of support and means a great deal to the members who wish to be advised of special articles in current medical literature. Those who make these reviews derive additional knowledge from the articles by the close perusal necessary to produce a concise abstract.

I am constrained to believe that the men who promised to do this work are conscientious and able and only need the urge of this editorial to remind them of their obligation. Send your abstracts to the editor before the first of every month, with a letter of hope and encouragement, telling him you expect to do better in the future.

R. H. McGINNIS.

DR. B. L. ARMS

State Health Officer

The high standard of efficiency maintained in the health affairs of our State under the competent leadership of Dr. R. C. Turck, has been influential in attracting residents to Florida from all parts of the nation. In laying aside the duties of State Health officer to enter another field, Dr. Turck carries the appreciation and confidence of the profession and the public.

In the appointment of Dr. B. L. Arms, by the State Board of Health, as the successor to Dr. Turck, we feel that the health matters of our commonwealth are placed under the direction of a well-trained, competent and conscientious man, and that our constructive program will achieve continued success. For twenty years closely identified with public health from Vermont to Texas and from Oregon to Florida, Dr. Arms assumes his new duties with an experience and a record of past achievement equalled by few men in this country.

Born at Springfield, Vermont, September 27, 1869, and receiving his preliminary education in the schools of that town, Dr. Arms was graduated in medicine from the University of Vermont in

the class of 1905 and began at once to lay the foundation for his future specialty by taking the service in Pathology at the Boston City Hospital for one year. For the next two years he was Bacteriologist, Boston City Health Department. In 1908 he became Assistant Director of the Bacteriological Laboratory, which position he held for two years, then becoming Director for three years (1910-13). During this latter period he was Instructor in Municipal Laboratory Methods, Massachusetts Institute of Technology.

Then he followed the admonition of one Horace Greeley and went West, where for one year he was State Bacteriologist for Oregon. The following year (1914) he taught Bacteriology in the University of Oregon as Assistant Professor.

Texas called and Dr. Arms accepted a chair in the University of that State, as Professor of Preventive Medicine, which position he held for two years, 1914 to 1916.

By a circuitous route, but still on the way to the "Land of Flowers", he spent a year in Alabama as State Bacteriologist, and finally reached his goal in 1917, when he was called to Florida as Director, Bureau of Diagnostic Laboratories, State Board of Health. To Florida they come, they look, and they stay and so the doctor stopped his ramblings.

Dr. Arms holds fellowship in the American Medical Association, American Public Health Association, and in the American Association for the Advancement of Science. He is a member of the American Association of Pathology and Bacteriology and the National Committee on Milk Standards.

In Dr. Arms there is combined the astuteness of the scholar, the exactness of the scienist, the diplomacy of the executive, and the charm of the gentleman. To the State Health officer of Florida we extend greetings, confidence, and our cordial good wishes for a successful administration.

STATE NEWS ITEMS

This department is supervised by Dr. Ralph N Greene, Jacksonville. Members of the State Association are requested to forward to Dr. Greene or the Editor such news items as they may think of interest to the readers of THE JOURNAL.

Drs. R. L. Harris and W. J. Buck, who have been associated in the practice of Roentgenology, Jacksonville, have dissolved partnership by mutual agreement. Dr. Harris will continue the practice of Roentgenology in the Professional Building, Jacksonville.

Dr. John S. McEwan of Orlando, President of the Florida Medical Association, has recently returned from an European trip. He reports a most interesting sojourn.

Doctor W. H. Ellis, formerly of Georgia, is now associated with Doctor C. E. Tumlin, 15 N. E. 11th St., Miami. Doctor Ellis is now away on a vacation but will return the latter part of September, at which time he will bring his family with him, as he expects to remain in Miami permanently.

Doctor W. A. Haggard and family, of Riderwood, Alabama, have located in Miami and are enjoying the prospects of their new home. Doctor Haggard will be associated with Doctor C. E. Tumlin.

Doctor C. E. Tumlin of Miami, with his wife and daughter, Marjorie, recently enjoyed a vacation at Asheville, N. C., having motored both ways, stopping en route in Atlanta and Jacksonville.

The DeSoto Commissioners at Arcadia have called an election for October 20th, to vote on a three million dollar bond issue for the purpose of building and equipping a county hospital. It is stated that the present hospital is wholly inadequate, although in the past it has rendered a great service to suffering humanity. The old hospital is occupied beyond the limit. The nearest hospital to Arcadia on the north is at Lakeland, and on the south at Fort Myers. During the first six months of 1925 eighty-three major and one hundred and fifty-three minor operations were done at the Arcadia General Hospital, in addition to which a large group of medical cases were treated. The medical profession of DeSoto County is united in favor of the proposed bond issue.

Doctor H. Marshall Taylor, 111 W. Adams St., Jacksonville, has returned from a European postgraduate trip extending over a period of ninety days. Doctor Taylor was accompanied by his family, and the party visited England, France, Germany and Austria. Doctor Taylor reports excellent clinic facilities, particularly at Vienna.

Doctor James Fellows of Pensacola is spending the month of October in New York City, pursuing special studies in Pediatrics. Doctor Fellows enjoys a large pediatric practice in Pensacola.

Doctor B. F. Barnes of the State Hospital at Chattahoochee, was recently in attendance upon the National Radio Exhibition held at the Grand Central Palace, New York City. Doctor Barnes is a recent recipient of an expensive and complete radio equipment, presented to him by one of the large radio manufacturers in appreciation of his developmental effort in the science of radio transmission.

Doctor H. Mason Smith of Tampa, a recently appointed member of the State Board of Health, has just returned from a trip to Baltimore and New York, where he attended clinics in a number of the larger hospitals. Doctor Smith has been particularly interested in nutrition problems relating to neurological diseases.

Doctor J. Q. Folmar, Chief Physician, State Hospital at Chattahoochee, has recently returned to Florida following a special course in neurological surgery at one of the leading New York hospitals.

Doctor Luther Holloway of Jacksonville, has recently returned from a visit to the Pediatric departments of John Hopkins Hospital and New York Post-Graduate Hospital.

Doctor Wm. E. Ross of Jacksonville is now in New York on his annual vacation and is, incidentally, in attendance upon pediatric clinics at one of the large Eastern hospitals.

Doctor W. M. Rowlett, Secretary of the State Board of Medical Examiners, is on his annual vacation in New England. Doctor Rowlett will return to his practice in Tampa on or about November 1st.

Doctor F. F. Farris, formerly of Florida, but more recently engaged in Eye, Ear, Nose and Throat practice in Cincinnati, will soon locate in Miami for the purpose of continuing his specialty there. Doctor Farris was formerly one of Florida's leading physicians and financiers. He was owner of the Leon Hotel in Tallahassee and the Palms Hotel in West Palm Beach.

Doctor James R. Bean has assumed his duties as Senior Bacteriologist of the State Board of Health of Florida. Doctor Bean is well known by the Florida profession, and his appointment by the recently selected state health officer, Doctor B. L. Arms, will meet with universal approval. The Florida State Board of Health boasts of the most complete chain of state laboratories of any state in America.

Doctor G. E. Weems of Apalachicola was a recent visitor in Jacksonville on account of the illness of Mrs. Weems, whose numerous friends will be pleased to hear of her satisfactory convalescence from a serious illness.

Several Florida physicians are reported to have made amounts ranging from one million dollars down to one hundred and seventy-five dollars on real estate investments. Their names will be withheld from these columns in the future, as it is not the desire of the editor of this journal to complicate these gentlemen on their income tax reports. If all the stories about doctors making money in real estate are true, the United States can safely cancel all of its foreign assets in the way of war loans, for the doctors will surely pay in enough money to the Treasurer of the United States to meet any and all emergencies for years to come.

Doctor H. F. Watt of Ocala was recently called to Chicago on account of the serious illness of his mother.

Doctor and Mrs. J. Harry Walters of Ocala enjoyed the month of August recreating in the mountains of North Carolina.

Doctor W. K. Lane and family of Ocala recently returned from an extended motor trip to Pennsylvania.

Doctor Albert H. Freeman, formerly of Jacksonville, is now located in Ocala, limiting his practice to the diseases of the eyes, ears, nose and throat. Doctor Freeman is a past president of the State Medical Association and one of the most capable doctors in Florida.

Doctor E. G. Peek of Ocala was recently reappointed by Governor John W. Martin, a member of the State Board of Medical Examiners. This is Doctor Peek's third appointment to membership on the State Board of Medical Examiners.

Mrs Dozier, wife of Doctor H. C. Dozier of Ocala, is reported as making satisfactory convalescence from a recent very serious operation at the Marion General Hospital, Ocala.

Twenty-five members of the Orange County medical society, comprising Orange, Osceola and Seminole counties, recently gave twenty-four hours for each member in the boy scout encampment of the Central Florida Council at Plymouth, looking after the health of the camp and giving personal instruction.

Doctor H. W. Gwynn of Orlando is spending three weeks in the clinics of New York.

Doctor Craney of Orlando is spending two months in Denver, Colo., studying diseases of the lungs.

Doctor John S. McEwan of Orlando, President of the Florida Medical Association, is reported to have admitted kissing everything else except the "Blarney Stone", which stone he also honored with the typical American salutation. Doctor Holton is with Doctor McEwan in Paris, and they are said to have concluded that Atlantic City and New York are wonderful but are particularly attracted to Paris.

Dr. and Mrs. C. C. Webb are receiving congratulations on the arrival of another daughter.

Dr. M. A. Lischkoff of Pensacola was among those attending the American Academy of Ophthalmology and Oto-laryngology, in Chicago. He states that many of the members were already interested in Florida and more would be soon.

Dr. W. C. Payne spent a few days in New Orleans investigating heliotherapy.

Dr. Evan L. Huggins of Freeport has been a frequent visitor to Pensacola. The Pensacola Hospital and an active real estate market are two attractions hard to resist.

Dr. J. H. Pierpont has returned from a pleasant motor trip through the mountains of North Carolina.

The Escambia County Medical Society and the staff at the Pensacola Hospital have begun their regular meetings after the usual summer vacation.

Dr. Shaler Richardson, Jacksonville, is attending the meeting of the American Academy of Ophthalmology and Oto-laryngology, being held in Chicago, October 21-24. Following this he expects to go to Philadelphia for the session of the American College of Surgeons.

STATE BOARD OF HEALTH NOTES

Dr. Jas. R. Bean returnes to the Laboratories of the State Board of Health after an absence of nearly nine years.

During the interim he was for two years in the service, and for fifteen months of this time he was overseas, being divisional epidemiologist with headquarters at St. Aignon.

He was for four years located at Birmingham, Alabama. Before going into service at Birmingham Infirmary and after his return was in charge of the Jefferson County Laboratory. This Laboratory was a combined county, state and city Laboratory, for in Alabama a county is the unit for all health endeavor, i.e., the county health officer is also health officer of every city in that county, and the other lines of health work are also on the county plan, although a city may supplement the county appropriation for strictly city measures such as, from the laboratory standpoint, milk examinations.

At the time of the reorganization of the Health Department in Savannah, Dr. Bassett secured Dr. Bean's services to direct the work of the Laboratory Division of that city.

We are glad to welcome to the State Dr. E. C. Levy, the new health officer of Tampa, and we congratulate that city on its farsighted investment.

Dr. Levy's pioneer epoch-making work at Richmond is well known to all public health workers in that country, and that his work has been appreciated by his fellow-workers is borne out by the fact that he has served as president of the American Public Health Association.

ABSTRACT DEPARTMENT

SURGERY

Reducing the Surgical Risk in Some Gastro-intestinal Conditions, Orr, Thomas G., and Hayden, Russel L. Journal of The American Medical Association, 1925, Vol. 85, No. 11, page 813.

As a part of a Symposium, having to do with the general subject of poor surgical risks, and methods which have been developed to combat the elements of the cases producing the risks, this paper, from the University of Kansas School of Medicine, brings again to our attention some of the newer therapeutics, built upon the solid foundation of Physiology, and directed to the reduction of mortality in one of the most distressing and disheartening problems arising in surgical practice, namely, intestinal obstruction.

Orr and Hayden, having their attention drawn to blood chemistry in gastro-intestinal tract obstructions, by three cases of gastro-enterostomy presenting stormy symptoms, found that the blood showed in each case, a marked increase in nonprotein nitrogen, a fall in chlorides and an increase in the carbon dioxide combining power of the plasma.

They then proceeded to study, experimentally, the blood chemistry in animals, mostly dogs, in cases of pyloric and upper intestinal obstruction, and found a universal rise in the nonprotein and urea nitrogen, and in the carbon dioxide combining power of the blood, and a drop in the chlorides. There was also a constant similar change in the urine in the experimental animals.

Experiments were then done, properly controlled by control experiments, in replacing the chlorides of the blood, both before and after the onset of the symptoms of intoxication in the dogs, with artificially produced obstructions of the duodenum and jejunum. The dogs with obstructions untreated, and those treated only with distilled water injections, died in from three to eight days. Those treated with replacement of the chlorides by hyperdermoclysis of normal sodium chloride solution, and by stronger chloride solutions, did not develop the typical blood changes enumerated above, and lived from twenty to thirty days.

The experimental studies are backed up by brief references to a few cases studied and treated along the same lines with gratifying results.

The authors conclude that the chlorides seem to be the essential factor in the occurrence of and in the treatment of the toxæmia incident to high intestinal obstruction; that a drop to 400 in the blood chloride of a case of intestinal obstruction should be the indication for the generous administration of sodium chloride, and that it is best given in 1 to 2 per cent strength, subcutaneously, or 5 per cent intravenously, the amount being gauged by the blood findings of the individual case. They have estimated a dose of 1 gm. per kilo of body weight as an initial dose in very toxic cases. J. K. S.

Fractures of the Lower End of the Radius, by Ralph M. Carter, Green Bay, Wis. Surgery, Gynecology and Obstetrics, 1925, No. 3, page 287.

The author presents a comprehensive study of a type of fracture which occurs very frequently in the experience of practitioners and surgeons. He maps out in detail a thorough method of treating them. First, there is a review of the anatomy of the elbow and wrist. Then follows a discussion of the three most popular theories of the mechanism of the force causing these fractures:

"1. The force is transmitted by means of bony segments exclusively, no ligaments being involved.

2. The force is concentrated upon the anterior radiocarpal ligament, which tears off a fragment.

3. The force follows a complex course from humerus to ulna, and from ulna to radius by means of the interosseous membrane."

The author believes there may be a combination of these mechanisms and at times also an impact of the carpal bones against the lower end of the radius, with damage to the ligamentary apparatus of the wrist.

The matter of diagnosis is usually not difficult, especially with the aid of x-ray examination. Though no line of fracture may be demonstrable the plane of the articular surface of the radius with the carpus is helpful in diagnosis. Reduction should correct any deviation from normal in this plane.

The treatment recommended is as follows:

1. Reduction under general anæsthesia. First by hyperextension of the wrist, then by pressure over the distal fragment to force it into position.

2. Apply light anterior and posterior splints with hand in position of adduction, one-half way between pronation and supination. Do not use

a plaster cast. Be careful of pressure by the splints.

3. Institute massage and motion. Begin gentle massage and passive motion on the third or fourth day. To do this remove dressings completely. Repeat every other day with gradual increase in the length of treatments. By the tenth day the anterior splint may be discarded. the posterior by the third week. Then support wrist with bandage of adhesive. Carry arm in sling so that hand naturally falls in position of adduction. At end of fourth week permit the patient to perform light household duties; at six or eight weeks to do usual normal labor; and in ten or twelve weeks to use wrist for heavy lifting. E. J.

MEDICINE

Increased Permeability of Vessel Walls as a Frequent Cause of Pulmonary Hemorrhage, F. M. Pottenger, M. D. The American Journal of the Medical Sciences, No. 642, Vol. CLXX, No. 3.

Dr. Pottenger remarks on the frequency of blood spitting in pulmonary diseases, particularly tuberculosis.

Formerly blood in the sputum was supposed to indicate destruction of a portion of the wall of the pulmonary vessel. Recent more careful observation of tuberculous patients indicates definite underlying causes. Ulceration of the walls of the vessel injured and the closing of returning capillaries, changes in the weather, presence of acute respiratory infection and the menstrual cycle are counted as underlying causes.

He calls attention to the frequency of blood spitting in tuberculous patients during menstrual period. This has been called Bicarious Menstruation. This is an incorrect explanation.

Different observers have called attention to the present relationship between hemorrhages and the presence of pneumococci and other organisms causing acute respiratory infection. This is well established. Browning's observations indicate relationship between pulmonary hemorrhage and barometric changes. Krogh has discussed the effect of capillary poisons which cause dilitation of the vessel walls and permit a ready passage of the contents of the blood into the tissues.

He summarizes his paper by saying that acute infections of the lung are apt to produce their greatest effect at the point where the tissues are now or have been injured by tuberculous process. the menstrual enzyme, in some manner, causes increased activity in local tuberculous processes. Certain weather changes, the exact factors in which we do not know, affects all tissues of the body, particularly the lung. T. Z. C.

The Value of Iron in Anemia. An Eperimental Study, by Charles Spencer Williamson, M.D., and Harold N. Ets, M.S. Archives of Internal Medicine, No. 3, Vol. 36.

He discusses the question of absorption and utilization of iron in the formation of hemoglobin. He calls attention to the fact that the results of researchers have not been in accord.

He calls attention to the studies of Bunge and Haeusermann, analyzes the studies, pointing out the defects in their research work. Whipple and his associates have studied the question and shown that diet of animals was of greatest importance, and have given no support to the value of inorganic iron in simple anemias. Musser's studies fail to show any favorable influence in organic iron in experimental hemorrhagic anemias. Scott and Barcroft state that iron seems to "anticipate the cure, which occurs normally". Gibson and Howard still feel justified in the continued administration of iron in the form of Blaud's Pills.

The author undertook his experimental studies after selecting animals that could be obtained in large numbers in large litters, to use animals in sufficient numbers, a standard Basal diet adequate in all respects, a proper method of determining the hemoglobin. The method chosen to determine the hemoglobin was the spectrophotometric method. Rats and dogs were used for his experimental work. Various diets were arranged with the amount of iron in each diet accurately determined. The first series of forty-five rats were divided into two groups, one-half of each litter placed on standard iron-free diet and half on the diet containing iron which was described. This group was continued for six and one-half months. The second group of thirty-six were carried in this for four and one-half months. The third group of eighty-five for three months. The fourth group had 28 per cent of their blood volume removed and were placed on the same diet for various periods. A second group of forty-one rats had 2 c.c. blood removed from the heart and then placed on diets. Group six of sixty-two rats was used to test the value of iron hypodermically. Group seven of sixty-one rats were used to determine whether the young rats that had been kept on an iron-free diet during gestation and lactation would have a lower hemoglobin concentration than those born of dams

that had been kept on such a diet plus medicinal iron during the same period.

Further experiments were carried out on dogs Altogether, there were four groups of dogs.

His conclusions were:

1. Inorganic iron, whether given by month, subcutaneously or intravenously, is absorbed and may be found especially in the liver and spleen but is not converted into hemoglobin.

2. Animals made anemic by one or several large bleedings do not recover any more rapidly when inorganic iron is given in any of these ways.

3. The efficiency of food iron is very pronounced, and animals on a diet containing food iron, recover very rapidly from hemorrhages that remove an amount of iron greater than exists in the entire body outside the blood.

4. In the light of the foregoing experiments, the administration of inorganic iron has no therapeutic value in anemia. T. Z. C.

DERMATOLOGY

Pityriasis Rosea, Two unusual cases. D. W. Montgomery, M.D., and G. D. Culver, M.D. Archives of Dermatology and Syphilology. Vol. 12, No. 2, page 257.

It has long been observed that the disease is of the immunizing type, i.e., one attack is rarely followed by another. In the first case reported, a typical attack followed by a large herald patch on the cheek of a patient, who had the disease ten years previously. The disease was diagnosed at that time by an eminent dermatologist, and the patient was satisfied that the present attack was the same as the previous trouble. The second case again proved the exception by being intensely pruritic in character, so much so, that a confrere had made a tentative diagnosis of scabies. Subjective symptoms are ordinarily lacking.

The author concludes that apparently pityriasis rosea is an immunizing infective disease, which is self limited, and if infectious, is selectively so. In spite of self limitation treatment is of value. J. L. K.-S.

OTO-LARYNGOLOGY

A Review of Radiotherapy for Chronic Tonsolitis. James W. Babcock, M.D., New York Annals of Oto-Laryngology, September, 1925. Vol. XXXIV, No. 3, page 834.

The treatment of Chronic Tonsolitis by X-Ray is presented in a digest of forty-nine articles occurring in the literature during the past three or four years, with personal observations and histories of ten cases from the practice of Dr. C. G. Coakley and the author.

The writers favorable to radiotherapy are of the opinion:

1. That X-Ray avoids operative risk, undoubted tho small.

2. Reduces the size of tonsil by dimunition of lymphoid tissue with increase in connective tissue.

3. Returns the tonsil to appearance of health and normal function, eradicating the focus of infection by widening and lessening the depth of the crypt and freeing them from pathogenic bacteria.

4. Acts favorable on adenoid tissue and other lymphatic structures which are difficult to remove surgically.

5. Number of treatments are from one to eight.

The writers unfavorable to X-Ray treatments maintain:

1. That size is not a factor when determining the amount of damage done by diseased tonsils. That the portion showing behind the anterior pillar is erroneously considered as index of size of whole tonsil, and that X-ray produces a retraction of the tonsil rather than a real decrease in size.

2. That if radiotherapy destroys the lymphatic tissue to replace it with scar tissue, what becomes of any suppositious endocrine function?

3. That the tonsil is not freed of pathogenic bacteria.

4. That patients improved with radiotherapy are apt to have recurrence of symptoms.

5. That dryness may result and that indications for elimination of tonsil infection do not allow protracted courses of treatment without danger.

The author's case records are not encouraging for X-Ray, local symptoms recurring and focal general symptoms persisting until surgery was resorted to. He concludes with his own observations that:

Radiotherapy in chronic inflammation of the lymphoid tissue of the pharynx and naso-pharynx does not

1. Cause a disappearance or fibrosis of this tissue.

2. Render the crypts of the tonsil free from pathogenic bacteria.

3. Relieve the patient of acute local inflammation or the remote symptoms due to absorption of toxins or bacteria from the tissue in question.

Therefore does not accomplish the effects chiefly desired and cannot replace adequate surgery. J. L. B.

PEDIATRICS

The Treatment of Thrush with Gentian Violet. Harold K. Faber and Lloyd B. Dickey. Journal A. M. A., Vol. 85, Sept. 19, 1925.

In an epidemic of thrush affecting fifteen infants in an institution the authors found astonishing results from the use of a 1 per cent aqueous solution of gentian violet without supplementary washes. The solution was painted on the buccal mucous membrane once a day, midway between feedings. From one to three applications were all required and a cure was effected in from one to three days. It is recommended that this solution be employed as a prophylactic measure in hospitals or institutions in which an epidemic of thrush exists. J. D. L.

Vaccine Therapy. The Method of Choice in the Treatment of Whooping Cough. Charles J. Bloom. Archives of Pediatrics, Vol. XLII, August, 1925.

The author furnishes result of his observations from 1916 to the present time. He is especially sure of the value of pertussis vaccine in the prophylaxis of whooping cough and presents figures to prove its value.

In the treatment of the disease his results are decidedly good, since the average duration of the disease was about 21 days and complications exceedingly infrequent. He employs for both preventive and curative purposes a mixed vaccine, each c.c. containing 5,000,000 pertussis vacilli and 3,500,000 influenzæ bacilli. The vaccine should by preference be freshly prepared, not over two weeks old, and in order to give the vaccine a fair test we must have some laboratory producing vaccine every week. In the series of cases reported an average of four injections of 1 c.c. were required. Of 374 cases reported there were no deaths. Practically no internal medication was employed. J. D. L.

"A study of the Relative Value of Two Breads in the Nutrition of Children", Dorothy C. Chidlow. Archives of Pediatrics. Vol. XLII, August, 1925.

For purposes of observation a number of children in an institution were fed on a diet including ordinary white bread and others on a diet including a special germ bread. The germ bread was compounded approximately of 18 parts wheat embryo and 82 parts white flour. The observations were exhaustive, impartial and conclusive. The children fed on germ bread gained faster in weight and showed more physical vigor than those fed on ordinary white bread. This is probably due to the greater amounts of vitamines A and B and iodine found in germ bread. The article contains a foreword by Dr. George Fiske in which he deplores the universal use of white bread, which constitutes one-third of the diet of the major part of the population, and a warning that if this continues it is only a question of time when there will be a deterioration of the race, not only in numbers but in all else that makes for national greatness. J. D. L.

SPECIAL PULLMAN TO DALLAS, TEX.

On account of the annual meeting of the Southern Medical Association, Dallas, Texas, Nov. 9th-12th, special rates have been made by practically all railroads at one-half fare for the round trip; tickets on sale from Nov. 5th-11th; final limit, Nov. 18th. It will be necessary for members to secure Identification Certificate from Mr. C. P. Loranz, Secretary, Birmingham, Ala., in order to secure the reduced rates. When certificate is secured, present same to your Ticket Agent and he will sell you round trip ticket to Dallas at one and one-half fare.

Special Pullman will leave Jacksonville via the Southern Ry. "Kansas City-Florida Special", 9:00 p.m., Nov. 7th; leave Atlanta 7:00 a.m., Nov. 8th; Birmingham, 12:30 p.m. and arrive Memphis 7:30 p.m. Leave Memphis via the Missouri Pacific "Sunshine Special", 11:15 p.m. (sleeper open 9:30 p.m.), and arrive Dallas, 1:15 p.m. Monday, Nov. 9th, in ample time for members to secure hotel accommodation, register and attend any special entertainments during the afternoon and evening.

Those who desire Pullman accommodations in the Special Pullman leaving Jacksonville on above schedules, should write Mr. V. L. Estes, Division Passenger Agent, So. Ry., Jacksonville, stating kind of reservations desired, and same will be handled promptly.

Members from Georgia, Alabama, Tennessee, Virginia, North and South Carolina, will use the above route and schedules, and it is expected there will be enough business out of Memphis for a special train to Dallas.